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ABSTRACT

The response to seatwork assignments of 26 high and low achievers in 8 first grade classrooms was examined. Students were observed during five half-days of school over a five to six month period. Teachers were interviewed twice during the year, with particular attention being paid to how they handled selecting seatwork assignments, presented them to students, monitored seatwork, and evaluated and gave feedback. A review of the data revealed that every poor responder was a member of a lower level reading group, and every high responder a member of a higher level reading group. These data suggested that seatwork was a qualitatively different experience for low achievers. Further analyses of the data revealed that poor responders differed in ease of answering questions, and used strategies that helped them complete assignments but did not aid their understanding. These data suggested why achievement differences widen over time; lower achievers were spending less of their seatwork time in beneficial ways than were the higher achievers. Teacher data indicated that poorer responses of lower achievers could be related to the teachers' emphasis on seatwork as a matter of routine, assignment of work that was too difficult, failure to provide help-seeking mechanisms, and an emphasis on persistence and task completion rather than on task understanding. Case studies are appended of four high achievers and four low achievers. (JD)

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Student Responses to Classroom Instruction:

Final Report, NIE-G-80-0073

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Abstract

The Student Responses to Classroom Instruction Project examined the responses of first grade students to seatwork assignments. The major premise of the study was that patterns of short-term outcomes, such as students' daily experiences with their assignments, underlie and explain longer-term measures of achievement. Thus, an observational study was carried out to learn more about the determinants of students' responses to the common situation of seatwork, particularly reading seatwork.

Four target students in each of six classrooms (male and female high and low achievers selected within each class) were observed during five half-days of school over a five to six month period. Observers took detailed narrative records, noted seatwork performance, and spoke informally with the target students about their work. Teachers were interviewed twice during the year, and their daily seatwork presentations were audio-recorded when possible.

Narrative records of students were read and rated for attention to task and successful performance, two short-term outcomes that had been associated with achievement gains. Based on these ratings, two extreme groups of students were identified for further comparative purposes: students whose responses were frequently poor (low attention and low performance) and students whose responses were generally adequate (high attention and high performance). In addition, teacher interviews and narrative records were reviewed for information about how four common instructional functions were handled: selecting seatwork assignments, presenting them to students, monitoring seatwork in progress, and evalu-

ating and giving feedback about seatwork.

There were both poor and adequate responders in every class, so that no single teacher appeared to be more effective than the others in preventing poor response patterns. There were no relationships with sex: both boys and girls were represented in both extreme groups. However, there was a clear association with achievement classification: Every poor responder was a member of a lower level reading group, and every adequate responder was a member of a higher level reading group. (Selection of extreme groups was done independently of any other information on the child except for attention and performance ratings.) These data suggest that seatwork was a qualitatively different experience for lower achievers than higher achievers. Further analyses of the narrative data revealed that poor and adequate responders differed in terms of the ease of answering (poor responders were less often functioning at an automatic level of information processing) and strategies for doing the work (poor responders were frequently observed using strategies that helped them complete their assignments but that did not aid their understanding). To some extent, the poor responders revealed a greater focus on getting finished for the sake of finishing, but this was not as clear cut as the other differences. Neither poor nor adequate responders spoke very specifically about content-related purposes of their seatwork.

These data suggest why achievement differences widen over time. Lower achievers (who were likely to be poor responders) were spending less of their seatwork time in beneficial ways than the higher achievers. Per-

haps the lower achievers were learning as a result that school tasks can not be expected to be sensible. Such expectations could interfere with development of general learning to learn or metacognitive strategies.

The teacher data revealed that the six teachers were more similar than different in the ways they dealt with seatwork. Relationships between instructional practice and student response can only be hypothesized and not tested with these data, given the lack of variance for teacher measures. However, it seemed reasonable that the poorer responses of the lower achievers could be related to the teachers' emphasis on seatwork as a matter of routine, assignment of work that was too difficult for the lower achievers much of the time, failure to provide help-seeking mechanisms, and an emphasis on persistence and task completion but not an emphasis on task understanding.

It is recognized that many teachers' seatwork routines are the result of the complex demands of distributing attention to all students, and of using seatwork as a way to free the teacher for reading group instruction. All of the teachers in the study were concerned about their low achievers' learning, but in every class, there were instances of poor responses that resulted in some way from the ways that the teacher typically selected, presented, monitored, or evaluated seatwork. It is hoped that the contribution of this study will be to provide teachers with new ways of seeingstudent responses to seatwork. This is a first step to examining seatwork routines with an eye toward improving the seatwork experience for the lower achiever.

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The Student Response Study focused on students' immediate responses to instruction as important short-term outcomes of teaching. Most research on teaching effects has used long-term outcome measures as criteria (e.g., achievement tests). In this study, students' daily responses--both behavioral and cognitive--were viewed as immediate indicators of instructional effects. A basic assumption underlying the study was that learning from classroom instruction can occur most readily when students respond to instructional stimuli in a cognitively active and generally successful manner. Thus, the goal of the study was to learn more about instructional contexts that support active and successful student responses. This goal has been partially attained: results of the study suggest what instructional contexts are associated with poor patterns of responses, although data do not suggest clearly if and how teachers affected optimal responding of their students.

Throughout this study, the major focus was on students' responses to seatwork: assignments that involve reading and writing that are given to students to be carried out independently, without continuous teacher supervision. The interest in seatwork was based on the pervasiveness of this format in elementary classrooms. One recent study determined that elementary students spend up to 70% of their allotted instructional time doing seatwork (Fisher, Filby, Marliave, Cahen, Dishaw, Moore, & Berliner, 1978). In spite of this,

little is known about what students do and think as they perform seatwork or how teachers can most effectively use this setting to further learning (Brophy & Good, in press; Rosenshine, 1980).

Therefore, a study was designed to describe ways in which first-grade students responded to and dealt with seatwork. The student responses of most interest were the apparent focus of the students' attention, the nature of the students' involvement with instructional stimuli (e.g., how does s/he approach a written assignment), initiative taken by the students to seek help when they were confused or unable to answer something correctly, the level of success on daily seatwork assignments, and student perceptions of how and why they were doing daily seatwork tasks.

Background

Two lines of conceptual and empirical work were the basis of the study. The first line concerns students' cognitive processing, students' mediation of instructional effects, and student's perceptions of classroom events (Doyle, 1977 and 1979; Winne & Marx, 1977; Weinstein & Middlestadt, 1979). The major question addressed by work in this tradition is "How do students think about what is going on in classrooms?" and "How does student thinking mediate classroom events to influence outcomes?"

The second line of research, in contrast, has focused more on teachers and emphasized the question of teacher effectiveness: "What do teachers do that affects students' learning in classrooms?"

Much of the research in this tradition has been described as process-product research (see reviews by Brophy, 1979; Peterson & Walberg, 1979). This work focused primarily on teacher behavior and tried to relate it to student outcomes such as performance on achievement tests.

Two teacher effects studies were especially influential in the design of the Student Response Study. The Beginning Teacher Evaluation Study (Fisher, et al, 1978) introduced the concept of "academic learning time," which was defined in terms of two key student responses: attention and involvement with a task and successful completion of that task. The greater the amount of time spent mentally involved with tasks at a high level of success, the greater the achievement on similar tasks, at least for elementary math and reading. The Student Response Study provided numerous examples of students who varied in terms of attention and success on reading and math seatwork. Because of the richness of the narrative data, results provide insight into the nature of academic learning time and reasons for individual variation within classrooms.

The second teacher effects study that was influential in the design of the Student Response Study was research on classroom management. Third-grade teachers who were more effective managers seemed more "tuned in" to the immediate responses of their students (Anderson, Evertson, & Emmer, 1979). Therefore, it was hypothesized that differences in students' responses to instruction could be related to teacher variables as well as to individual differences in

students. This hypothesis was supported, although there were not as many teacher differences within the sample as had been expected, so that clear-cut, classroom-level evidence of teacher effects was not available.

Methodology

Observations were conducted in eight first-grade classrooms in four Title I schools in a midwestern city. Observations began October, 1980, and continued through April, 1981. All classrooms were self-contained and taught by one teacher, although some of the teachers also had aides for part of the day. Ten teachers were approached and asked to participate in the study, and eight of them readily agreed. Data from six of the eight classrooms are reported in this paper. All six used a traditional organization of ability-based reading groups with seatwork performed by students when they were not meeting with the teacher. The other two classrooms had versions of individualized reading programs[1].

Within each of these eight classes, four students were selected as target students for observations: a male and female high achiever and a male and female low achiever. During September, teachers identified students whom they considered to be in the highest achieving third and the lowest achieving third of the class in terms of reading performance. From these two extreme groups within each class, children were selected from the pool for whom there was written parental permission. The original sample of 32 target students was reduced to 30 due to student mobility or absences. In the present paper, 23 students from six classrooms are discussed.

Results are based on the observations done by three people, each of whom observed two classrooms by herself. Before beginning observations, the three discussed extensively the purposes of the study and methods of writing focused narrative records. Throughout the data collection period, the three observers met weekly to discuss their experiences. During these discussions, the principal investigator's role was to maintain a focus on the key questions of the study and to monitor any significant drift by one observer from the perspective of the others.

Observations were scheduled so that each student would be seen during five half-days over the six month observation period. During each visit to the classroom, the observer focused on two target students who had a similar schedule. This meant that two students from the same reading group were usually seen on the same day. Student absences and reading group transfers led to occasional alterations in this schedule, and therefore total observation time varied from student to student. Table 1 gives the number of minutes each student was observed with time spent in transitions, recess, and other non-academic times excluded from the total.

Observers noted detailed descriptions of students' activities throughout the session. The typical procedure was to pay very close attention to one child for about 10 minutes and then switch to the other child. This time sampling approach was used flexibly, so that, for example, the end of a particular assignment or the end of an interaction with the teacher could be noted in detail.

In the field notes, the observer described what the child was doing, what he or she seemed to be attending to, how seatwork was approached, what the student did when (s)he encountered a problem, and how successful the student was. The observational record also included as much information as possible about the instructional stimuli present at the given moment. Copies of the seatwork were obtained or described in detail. Teacher explanations of assignments were audio-recorded.

After an observation was completed, the observer taped a detailed narrative record of the morning's observation that included times. Also noted after the observation was the completed performance of the child on assigned work that day and any teacher feedback on that work that was seen or heard.

The resulting data provided a very detailed record of what the child was doing on a minute-to-minute basis. For example:

9:51 J. looks back at the board and writes "te" (copying yesterday) and then looks around some and then writes "day," all at once, without looking at the board for each letter. Then, he glances over toward A. reading, but does not interact with her. (She is reading aloud "to herself," about three feet from J.)

9:52 He goes back to his writing and writes without distraction: "Matt/ha/d" (the slashes indicate where he looked up at the board while copying) and then looks up at S. (sitting across the table

from him) as the teacher is elaborating on a fact in the story that S. has just read. (The teacher reads with individual students at this table. J. has been called to that table to do his seatwork after the teacher saw him talking to a friend at his desk.) J. looks up at the board and then writes "a c/old," (the slashes indicate where he looked up at the board while he was copying.)

The observational data were supplemented with informal conversations with students about work done that morning, in order to tap the student's understanding of how and why (s)he was doing the work. For example, the child might have been asked to "show me how to do this page" or "How did you know to choose this word instead of that word?" Questions designed to elicit the child's understandings of the purpose of the work were "What are you learning about when you do this work?" and "Why do you think your teacher wanted you to do this page?"

The eight teachers were also interviewed both formally and informally to determine their perspectives on seatwork and its use. These interviews are described further in the data analysis section of this paper.

Data Analyses

Student data: Quantitative analyses

In order to select students for comparison purposes, ratings of attention and seatwork performance were made of all narrative and seatwork data. The objective was to identify groups of students who were consistently responding to instruction in facilitative (adequate) or unfacilitative (poor) ways. After selecting extreme groups, narrative data were reviewed again to identify what was common within each group and contrasting between groups of students. It was felt that a series of discrete ratings of two different types of responses would be a more objective indication of student response patterns than an observer's or reader's global rating. Thus, the quantitative analyses laid the basis for choosing cases for further qualitative analyses.

Because earlier work in teaching effectiveness (e.g., Brophy & Evertson, 1976; Fisher et al., 1978) has identified the student variables of attention to task and successful performance as predictors of long-term achievement, the first step was to identify students who were both attentive and successful and students who were usually neither attentive or successful.

Procedures for rating student attention and performance. The first step in rating the narratives was to designate distinct episodes of academic activity. Whenever there was a change in the task the student was working on, the composition of the group (s)he

was in, the type of activity required of the student, or the presence of the teacher, a new episode began. Thus, episodes were as short as a minute (for very brief seatwork tasks, for example) and as long as fifteen minutes. Within each episode, raters assigned a score on a scale of 1 to 5, with 1 representing almost no attention paid to the task or instruction, 3 representing attention to the task about half of the time, and 5 representing attention to the task for essentially all of the time during the episode. If the rater felt that there was not sufficient data in the narrative to make a rating, then that episode was not scored. Narratives were not rated by the observer who had written them.

After training, raters initially worked in pairs and achieved agreement within one point on 88% of 113 episodes. After this they worked alone. Because the ratings were only going to be used as a rough estimate of typical attentiveness, with the qualitative analyses playing a more important role, it was felt that this degree of agreement was sufficient. In no cases was a disagreement greater than 2 points on a 5-point scale.

Performance ratings were made for each separate seatwork assignment. Student performance was rated 5 if 100% of all answers were correct, 3 if 50% of all answers were correct, and 1 if none or almost no answers were correct. If performance had not been noted or could not be rated, then no score was given. Pairs of raters scored 81 assignments and achieved 99% agreement within one point. After this they worked alone. As with the attention ratings, the person who observed a child did not rate that child's performance.

Means and standard deviations for attention and performance ratings for all target students are presented in Table 1, along with total time observed, the number of episodes rated for attention, and the number of seatwork assignments that could be rated for performance. There are different numbers of scores for different children because of different assignments of varying lengths and absences from the room.

Selection of extreme groups of poor and adequate responders. Earlier research on effective teaching and learning had suggested that students would learn most easily when most of the time they were reasonably attentive and successful. In terms of the rating scales used, this would mean that most of the time, students would have ratings of either 4 or 5 on both scales, indicating that they were usually attending and usually successful.

In order to find students who met this criteria and those who did not, the percent of each type of rating that was below 4 was computed. This information also appears in Table 1. The higher this figure, the less time the student was responding in a way likely to promote learning. For example, Student 13 had 71% of his performance ratings below 4. This means that most of the time, he was successful with only half (or less) of the items on his seatwork assignments--clearly a record of failure. In contrast, Student 12 had none of her assignments rated below 4. This means that she always performed at or above a level of 80% of all items correct.

These data were then used to identify students as demonstrating either poor, mixed, or adequate patterns of responding to instruction. The criteria selected (based on the frequency distributions of all students' scores and natural breaks between clusters of scores) were the following: A poor response pattern was defined as one in which more than 15% of the performance ratings and more than 14% of the attention ratings were below 4. An adequate response pattern was defined as one in which fewer than 12% of the performance ratings and fewer than 15% of the attention ratings were below 4. A mixed pattern was one in which only one condition was satisfied for classification in an extreme group (i.e., attention and performance ratings were not congruent). Because these criteria were based on frequency distributions, without student or class identity attached to the scores, one source of bias in analyses was eliminated. That is, selection of students for extreme groups would not be influenced by knowledge of the students and teachers by the person who made the selection.

When these criteria were applied, a group of eight poor responders and eight adequate responders were identified. Qualitative analyses of these students' responses are presented in the results section.

Student data: Qualitative analyses

One of the main objectives of the study was to move beyond superficial analyses of "time-on-task" and to learn more about

student processes that occur during on-task or off-task times. During the year of observations, the weekly meetings of the research staff generated several hypotheses about relevant dimensions of student responses during seatwork that might distinguish patterns of adequate responses from patterns of poor responses. Three key dimensions provided a framework for a systematic review of the narratives:

1. Easiness of response and awareness of difficulty. These two factors are related to the students' usual performance level. The first factor describes the fluency and automaticity of the student's cognitive processing of the instruction and seatwork. That is, how much "mental energy" goes into answering a question or reading a passage? Although two students may arrive at the same correct answer or performance, they may differ in terms of how easily they reached that goal. Much of the learning emphasized at the first grade level is the basis of later learning, (hence, "basic skills" of reading, writing, and math), and must be "overlearned" so that it may be used fluently as a tool for other tasks. Therefore, one dimension of successful performance, in addition to objective accuracy, is fluency and automaticity of response. The second factor that may be related to successfulness may be the awareness of how easy or difficult a task is for oneself. Because an awareness that something is not understood is necessary for either overt help-seeking

or a covert search for a new strategy (both processes of interest in this study), this was considered an important dimension of student responses to seatwork tasks.

2. Strategies for doing work. A student may be "on-task" but applying an inappropriate strategy for answering questions on a seatwork assignment, or failing to use a strategy that would greatly simplify the task. An important question of interest in the study was the type of strategy used by students to complete their seatwork assignments. The term "strategy" is used in a general sense to mean any approach used by the student to arrive at an answer. It includes behaviors that may have supported learning, such as self-talk about the task or counting on one's fingers, even if there was not confirming evidence from the student or other source that the strategy was necessary for successful performance.

3. Attention to finishing and awareness of purposes of assignments. During the year, the observers noted many instances of students commenting on their desire to get work finished, and at times this seemed to interfere with their involvement with the content. Therefore, it was of interest to determine if this pattern was indeed prevalent, and if one group of students demonstrated it more than another (e.g., male vs. female, high vs. low achievers). Related to this was student awareness of the purpose of assignments, in terms of the skills or concepts supposedly being taught or practiced. Throughout

the year the observers questioned students informally (when time and opportunity permitted) about their perceptions of the purposes of various assignments, and it was of interest to know if students' answers to these questions were related to other patterns of student responses.

Review of narratives. With these three dimensions in mind, the narrative records of the poor and adequate responders were re-read, with all instances noted that provided information about the three dimensions. Because of the qualitative and sometimes unsystematic nature of the data, direct comparisons between students were not possible, but case studies were constructed that allow global comparisons between the groups of students. Four pairs of case studies (of contrasting students within classes) appear in the Appendix of the paper to demonstrate the kind of incidents used to illustrate each dimension.

Teacher data: Quantitative analyses

There were two sources of teacher data subjected to quantitative analysis: transcriptions of audiotapes of teacher presentations of seatwork, and two formal teacher interviews (also audiotaped and transcribed).

Audiotapes of teacher presentations. Transcriptions of audiotaped seatwork presentations were coded by two persons (usually not the regular observer) for several aspects of communication to students about the tasks. In this paper, data are presented for 1) statements about purposes for the assignments, and 2) explana-

tions of needed cognitive strategies for accomplishing the task.

Purpose statements were coded as one of the following categories. Numbers in parentheses refer to the variable as listed in Table 2.

1. No purpose statements were made. The teacher did not describe content being covered or explain why the task was important. (22)

2. The teacher described the content to be covered but not a specific purpose for doing the assignment (e.g., "This page is about the sounds of the letter g.") (21)

3. The teacher referred to a specific content-related purpose for the assignment in terms of how the task helps the child become a better reader, mathematician, learner, etc. (e.g., "This page will let you practice the two sounds of the letter g, so when you are reading by yourself and see a new word with a g, you will know to try both sounds.") (20)

Explanations of strategies were coded as any of the following categories (as many as applied):

1. No statement about how to do the task was given beyond information about finding it. (e.g., "Do pages 60 and 61 in your workbook.") (27)

2. Form expectations were included (e.g., "Remember to leave a space between rows," and "Mark the answers with circles but you don't have to write the words in the blanks.") (26)

3. Procedural directions were minimal explanations of steps taken to arrive at answers. Procedural explanations did not include cognitive strategies for deciding on the right answer (e.g., "Read the sentences and circle the picture that goes with it.") (25)

4. Cues were references to an isolated substantive aspect of the task that the student should attend to, but cues did not spell out all steps in thinking through a task (e.g., "Watch the signs, because this page has both pluses and minuses.") (24)

5. Cognitive strategies were explicit statements about how to think through the task and decide on the correct answer (e.g., "Say the name of each picture to yourself. Listen to the first sound that comes out of your mouth. Is it an f? If it is, then the word starts with the f-sound and you color it.") (23)

All available teacher explanations were double coded. Agreement on categories for purpose statements was 89% of all presentations coded, and agreement on categories of strategies explained was 87%. All differences were resolved by the principal investigator.

Unfortunately, only about half of all seatwork tasks had presentation data available. The reasons for missing data include: teachers explained assignments to one reading group at a time when the observer was focused elsewhere; explanation was given before the observer arrived; explanation was recorded but could not be

transcribed due to classroom noise, static or low power; observer forgot tapes or recorder. Therefore, the missing data probably does not reflect systematic error in recording one type of explanation, and the existing data is treated as a representative, though small, sample of seatwork presentations. Table 2 includes the number of presentations that could be coded (Variable 19) and are the basis of the other scores (Variables 20 through 27).

Interviews. Two formal teacher interviews were conducted in February and June. The February interview included questions about how teachers selected seatwork, what factors they considered in choosing assignments, how and when children received feedback on assignments, and teacher standards for students helping one another and finishing work on time. Specific questions about the target students were also asked, including questions about teachers' explanations for success and failure by each child (to learn about attributions made by the teacher.) In the June interview, the teachers were asked to talk about factors they considered in assigning challenging work or very easy work, and they were asked to talk about each student's progress during the year in order to determine what factors the teachers considered in assessing different students.

All interviews were audio-taped and transcribed, then analyzed in the following ways:

1. Responses to each question by all teachers were content analyzed in order to identify key dimensions of teacher thinking about a particular question. Within each question, from three

to eleven variables were defined that described most responses. There were sixty variables created in all, with each variable associated with one question on one interview.

2. Each teacher's response to each question was reviewed and coded for the variables created for that question. For example, one interview question focused on factors considered in selecting seatwork. One variable for this question was "Seatwork provides drill and practice in reading skills." Any reference in a teacher's answer that reflected this thought was coded as an instance of that variable. After completing a teacher's answer to one question, the total number of codes for each variable was tallied. Two readers coded all interview items, and differences were resolved through discussion. When both coders read the same statement, agreement on how to code it was high (ranging from 92% to 100%, depending on the question). However, each coder missed several statements that the other one initially identified as codable, so that overall agreement was much lower (from 48% to 59% of the total codes entered by each person were identical). Therefore, the resolution sessions primarily served the purpose of identifying all possible codable statements.

3. For each teacher for each question, a percentage score for each variable was computed to illustrate the percent of codable statements that fell into that category. In this way, teacher differences in talkativeness were accounted for in

that a teacher served as her own control in terms of relative emphasis placed on different dimensions. These percents were then converted to ratings of 1 to 5, to indicate the emphasis placed by the teacher on one dimension relative to all others that were considered for that question. A teacher was assigned a rating of 1 for a given variable if there were no instances of statements coded in that particular category. A rating of 2 was given if 1% to 10% of the codable statements for that question fell into that category. A rating of 3 corresponded to 11% to 21% of codable statements falling into that category. A rating of 4 was given when 22% to 32% of codable statements fell into that category. A rating of 5 was given when 33% or more of all codable statements fell into that category. (Criteria for ratings were based on a frequency distribution of all percent scores and the natural breaks in that distribution between clusters of scores.)

4. Rather than treating each variable as a separate source of information, larger dimensions of teacher thinking about seatwork were defined and cluster scores were computed by averaging ratings received on the variables that made up the clusters. Appendix B lists the separate variables (and associated interview questons) that made up each cluster score. Table 2 reports these cluster scores for each teacher on these dimensions, (with the variable numbers from Table 2 given in parentheses):

Student outcomes:

a. Emphasis on discrete skills and accuracy without reference to comprehension (1)

b. Emphasis on comprehension and sense-making (2)

c. Emphasis on neatness (3)

d. Emphasis on creativity (4)

Student processes/behaviors

a. Emphasis on persistence, completion of assignments (5)

b. Emphasis on effort, confidence (6)

c. Emphasis on behavior and cooperating with the teacher (7)

d. Emphasis on student paying attention (8)

e. Acceptability of students helping on another with seatwork (9)

5. In addition to the analysis of each separate question for associated variables, all teacher references to individual target students were analyzed for attributional statements, which were defined as any causal explanation for a student's behavior, performance, motivation, or personality characteristics, whether solicited by the interviewer or given spontaneously by the teacher. These statements were coded as to outcome (successful or appropriate outcome vs. unsuccessful or inappropriate outcome) and the source of control over the outcome (teacher-controlled through instruction, behavior management, or task selection; student controlled through effort or willingness;

or other source of control, through either student ability and personality or home factors.) Two coders read 55 attributional statements. Agreement for coding of outcomes was 100%, and agreement for coding of source of control was 96%. After reaching this level of agreement, one coder completed the scoring on her own. The frequency of teacher attributional statements as well as the percent of statements attributed to different sources of control are presented in Table 2 (Variables 10 through 15).

Teacher data: Qualitative analyses

Four types of data were available for qualitative analyses: the classroom narratives, records included in the narratives of informal conversations with the teachers about seatwork, the two formal interviews, and structured summaries of instructional routines and practices prepared by the classroom observers. These sources of data were used along with the quantitative data to describe how each teacher dealt with four instructional functions that are related to seatwork:

1. Selection of seatwork assignments.
2. Presentation of seatwork.
3. Monitoring of performance, behavior, and understanding during seatwork.
4. Evaluation of performance and feedback to students about their seatwork.

Case studies were constructed for each teacher with these four instructional functions as a framework.

Results and discussion

Student data

The driving question for the entire study has been, "How does the quality of day-to-day life in classrooms vary for individual students, and what are the implications of these differences for long-term learning and development?" Seatwork was selected as the focus activity for addressing this question because of the significant amount of student time spent doing seatwork. More specific questions addressed by the data analyses were: When differences exist between students in the quality of seatwork experiences, are these differences related to teacher effects, so that students in one classroom generally have more productive and satisfying experiences than students in another classroom? If so, what teacher factors account for this? Are differences in patterns of daily responses related to other student variables, especially achievement level? Do students in lower level achievement groups have less satisfying seatwork experiences, or is their quality of life similar to higher achievers? Are there differences in response patterns related to student sex? Does one sex but not the other typically respond in a manner that supports learning from seatwork?

The results of the Student Response Study provide answers to these questions for selected students in six classrooms. Although there is no objective evidence that these six classrooms are representative of all other first-grade classrooms, there is no reason to believe that they are completely atypical. The teachers were

similar in educational level and age to other teachers in their district, and their classroom organizations, routines, and curriculum materials were similar to many other classrooms that are familiar to the researchers. Therefore, although the results are not presented as universal patterns, they are put forward with the belief that they do not represent atypical cases.

Classroom differences in frequency of students in poor and adequate response groups. Each of the six classrooms had at least one target student classified as a poor responder and at least one target student classified as an adequate responder (see Table 1). Five of the six classes had at least one target student who showed a "mixed pattern", and the one exception to that trend was a class with only three target students due to a child who moved during the year. This pattern suggests that none of the teachers was uniformly successful or unsuccessful in influencing her students' responses. It also means that class-level analyses of differences among more and less successful teachers is not possible. Although there were some differences among the six teachers, they were similar to one another on several dimensions hypothesized to influence student responses, as discussed in the next part of the results section. Thus, the lack of variance among classrooms for overall patterns of responses means that further analyses of the process data must proceed at the within-class level.

Achievement group differences in frequency of students in poor and adequate response groups. At the beginning of the year, the teachers provided the reading group level of all students for whom parental permission had been obtained. Selection of target students occurred within reading groups so that equal numbers of low and high group members could be observed. Table 3 presents frequencies of students who were initially assigned to high and low reading groups and who demonstrated different patterns of responding at the end of the year. With one exception, all of the poor responders had been classified originally as low achievers. That one exception (Student 8, whose case study appears in the Appendix) was moved from the high reading group to the second lowest group (out of four) early in the year, so that the original assignment was misleading. Thus, all eight of the poor responders were members of lower-achieving reading groups. Not surprisingly, then, all eight of the adequate responders were originally assigned to the highest level reading group and remained there throughout the year.

Sex differences in frequency of students in poor and adequate response groups. As Table 3 illustrates, male and female students were equally represented in the poor responders category, and almost equally represented in the adequate responders category. Therefore, sex was not a predictor of patterns of responses to seatwork.

The findings presented above suggest that all six classrooms in the sample were characterized by inequities in the quality of student experiences with seatwork. Students who were better readers were more likely to be attentive to classroom activities and successful on their daily assignments than students who were poorer readers. This finding, though cause for concern, is not new or unusual. Other researchers have demonstrated that lower achievers are less attentive than higher achievers (Good & Beckerman, 1978; Rusnock & Brandler, 1979) and that teacher ratings of "good work habits" are positively associated with achievement levels (Brophy & Evertson, 1981). Indeed, the associations between achievement and student response variables such as attention and success may well represent a line of circular reasoning, given the prevalence of these patterns in classrooms. Higher achievers are more attentive and successful, and therefore higher achievement is always positively associated with these variables. Because such data are correlational, it has been impossible to argue which comes first: the pattern of student responses or the ability that presumably underlies achievement.

If it could be demonstrated that inattentiveness and imperfect performance on seatwork were inevitable for lower achievers, then the findings to date would have little significance. However, the qualitative analyses of the narrative records from this study suggest that there are more factors at hand than individual student differences in attentiveness and ability. Indeed, the narrative

records reveal that seatwork assignments were a qualitatively different experience for students classified as poor responders, compared to the students classified as adequate responders. This was primarily because the work assigned to the poor responders/lower achievers was more often difficult for them, while the adequate responders/high achievers were more often working at assignments at or below their independent level.

Thus, both groups of students were placed in a situation where they were expected to perform work independently, persist until completion, and use their knowledge of basic skills and strategies to figure out answers to questions. For the adequate responders/high achievers, this was accomplished easily because they possessed the skills and strategies necessary to do the job quickly, without any undue stress. For them, seatwork may not have been challenging (and perhaps often bordered on "busy work"), but it could be taken as a matter of course as part of the school day. For the poor responders/low achievers, on the other hand, for a significant portion of the time, they were expected to complete independently tasks for which they lacked necessary skills and strategies. As a result, the poor responders developed a variety of strategies for getting their work done that did not contribute to their practicing and learning the content that was ostensibly the basis of the seatwork assignments.

These conclusions are based on the qualitative analyses of the narrative records of the poor and adequate responders according to

the three dimensions described in the data analysis section: ease of answering and awareness of difficulty, strategies for doing work, and attention to finishing and awareness of purpose of assignments.

Ease of answering and awareness of difficulty. By definition, the poor responders were less successful on their work. This could be because the students did not try very hard or were careless about what they wrote, or it could be because the work was, indeed, often too difficult for them to do. The narrative data of student performance on the seatwork reveals that the latter explanation is true: poor responders were more often stumbling and hesitant on reading text in seatwork, they were more often unable to coordinate several steps in a procedure that lead to the answer, and they were more often operating from an inadequate conceptual base.

The following anecdotes illustrate this trend:

Randy (Student 8) could not read all of the words used in the standard board assignment, which involved copying sentences with blanks and selecting a word from a list of options. Everytime he was observed doing this type of assignment, he became stuck because he could not decode the key words to allow him to make the choice and proceed.

Beth (Student 9) could only read about a third of the key words in a Weekly Reader article that students were to read in order to answer questions that they copied from the board. She could not read all of the questions either.

Sean (Student 1) was given a ditto with nine pictures of seasonal activities. He was to cut out and paste on the

names of the seasons that matched the picture. After he quickly completed the assignment, the observer questioned him about it. He had matched only two out of eight seasons correctly, he could not read any of the season's names, and he was not sure in what season one sledded, flew a kite, went camping in a tent, or went swimming outdoors.

Aaron (Student 13) was to compose sentences with new vocabulary words listed on the board. He could not read some of the words, he could not spell most words he wanted to write, and he soon bogged down and stopped attending to task.

Case studies for each of these students are appended, and they illustrate that such examples were not atypical for them. In contrast, consider these illustrations of the adequate responders' performance:

Dexter (Student 4) composed and wrote a story about his family very quickly and easily, sounding out reasonable spellings for words he did not know. He was enthusiastic and told the observer, "This is fun!" (Contrast this to Sean's performance on the same assignment, described in his case study.)

Annette (Student 12) already knew all of the new St. Patrick's Day vocabulary included on a word search puzzle introduced by the teacher. She was one of the few students in the class who did. Thus, for her, the task was one of

looking for familiar words rather than a more complex task of remembering letter patterns of a new word at the same time that the array of letters is searched for that word.

These examples suggest that the adequate responders were not only more accurate in their performance, but that they achieved that accuracy through fluent cognitive processing. Because so many more concepts and skills had already been practiced to the point of overlearning, the seatwork tasks (that required the use of those concepts and skills) were performed almost automatically. In contrast, the same seatwork tasks often imposed a more complex information processing load on the poorer reader, who then responded poorly as a result. For a child who does not automatically recognize the words and read with implicit prediction of text, the task of selecting one of three similar words to go into a blank is a very difficult one, because short-term memory quickly is filled before enough relevant information has been processed to make the decision about the answer. It is little wonder that the poor responders did not attempt to "make sense" of much of their work and instead resorted to the kinds of strategies described in the next section.

One hypothesis considered when reviewing the narratives was that the poor responders might be less knowledgeable about what was difficult or less aware that they had encountered difficulty and should seek help. Although data were not gathered systematically to address this point, available evidence suggests that the poor

responders were indeed often aware that something was hard for them or that it did not make sense. For example, Randy (Student 8) explained to the observer that in the standard board assignment, the teacher would include new words but "I always get stuck on them." (He was right, he often did.) Sean (Student 1) told the observer that the ditto page on the seasons (described above) was hard for him. Thus, some of the poor responders seemed aware at least some of the time when something did not make sense or come easily to them, but this metacognitive awareness did not usually lead to an effective strategy for clarifying their understanding, as described in the next section.

Strategies for doing the work. Observations of the adequate responders revealed little about covert strategies, although they usually worked through their assignments quickly and accurately. Whenever there was observable evidence of a strategy or a student report of a mental strategy, it seemed to be an appropriate one. For example, all of the adequate responders were observed at some point talking to themselves about the task as they progressed through it (although this was also true for many of the poor responders.) Another example is of Annette (Student 12) who explained that she did the word search puzzle by looking "Backwards, frontwards, diagonally and then cross it off." For the most part, however, the adequate responders were not giving visible signs of the mental strategies they were using to arrive at correct solutions.

In contrast, the poor responders frequently provided evidence

of a strategy, although in most cases, the objective of their strategy seemed to be to get an answer down but not necessarily to understand the task. This most often occurred for assignments that were difficult for them. For example, consider the performance of poor responders to the tasks described in the preceding section:

Randy (Student 8) was unable to read some of the words on the board assignment. Even when he could read some, he would try to decide on a word to go in the blank as soon as he came to the blank in the sentence, even if it was to be the second or third word. That is, he did not read the entire sentence to provide a context for the choice. When he could not figure out the answer immediately, he asked another child for the answer. In this manner, he often was given most of the answers and was able to complete this assignment without learning to read the new vocabulary words (ostensibly the purpose of the task.)

Beth (Student 9), who could not read enough of the Weekly Reader article to get the necessary information to answer the questions, simply copied the questions and wrote answers that seemed logical to her, without consulting the articles. In the one instance where she did look, she searched for a number word to answer "How many legs does a grasshopper have?", and came to the phrase "Five eyes" in the article, and copied the number five. The teacher told the observer that the purpose of the assignment was for the students to learn to read for information, but this was not accomplished for Beth.

Sean (Student 1), who could not read the names of the seasons or match them to pictures of seasonal activities, tried at first to sound out the words (as suggested by the teacher when introducing the assignment). He could make the initial sounds, but didn't remember seasons that started with those letters. In spite of this, he quickly pasted the labels onto pictures without seeking help. When his answers were marked wrong, he asked no questions and made no visible response.

Aaron (Student 13), who was having difficulty composing sentences with vocabulary words from the board, wrote one sentence (which was meaningless to the observer because the spelling was cryptic), then stared into space for a while, then stayed in the bathroom for five minutes. Later, the teacher helped him get started on the second sentence, but he relapsed into staring soon after she left. Soon after that the bell rang and Aaron went home.

Each of these examples shows how the poorer responders were able to accomplish a short-term goal. For Randy and Beth, their strategies allowed them to complete the assignments and thus go to lunch with the class. (In both of these classrooms, failure to finish morning seatwork meant being late to lunch.) In Sean's case, finishing assignments was the necessary prerequisite for playing games in the room. For Aaron, there were no particular consequences of failing to finish that day, but his avoid-

ance tactics meant that he did not spend as much time facing a frustrating task. Despite the immediate rewards to the children of their strategies, their approaches to the tasks did little to further understanding of the content and skills that were part of the assignments.

Of particular interest was help-seeking as a strategy for resolving difficulty. It was not possible to compare the two groups of students directly on this process, because the adequate responders so seldom were observed in situations where help-seeking was necessary. On the other hand, the poor responders varied a great deal in their use of help-seeking strategies, and individuals showed variability across situations. At one extreme is Randy (Student 8) who asked other students for answers whenever he was unsure about an item (but who seldom asked the teacher for help even when she was available). At the other extreme is Beth (Student 9), who was never observed asking for help, even though she seemed to know that she had written incorrect answers when the observer was talking to her about her work.

As discussed in the section on teacher data, in no classes were there regular systems in place through which students could easily and legitimately get help, and teachers did not emphasize the importance of seeking help during their presentations of seatwork. Therefore, it is perhaps not surprising that students did not seek help when they recognized a problem or that they sought help in maladaptive ways.

Attention to finishing and awareness of purposes of assignments. Another hypothesis about differences between the response groups was that poor responders may have been concentrating only on getting finished, while adequate responders were more aware of the content-related purposes of seatwork and therefore approached their work more thoughtfully. Although data were not collected systematically on this (i.e., it was not possible to question students about purposes of assignments during every visit), available evidence suggests that the hypothesis is not completely supported. There was more evidence among some (not all) poor responders of a focus on finishing, as illustrated in the following examples:

> Randy (Student 8) exclaimed with delight that "It's done!" when he finished a paper. He later told the observer that he did not like assignments to write stories because "it takes so long, and then I can't play."
>
> Beth (Student 9) kept comparing progress on boardwork with her neighbor as they engaged in a competition to finish the copying assignment first. Whenever she reached the end of a sentence, she raised her hands in a silent cheer.
>
> Richard (Student 10) finished a worksheet and said to himself, "There, I didn't understand that but I got it done."

Adequate responders were occasionally observed to compare progress with another student, but this was not frequent for them. They did work through their assignments steadily, but their approach did not suggest a preoccupation with getting done.

The second aspect of the original hypothesis was that adequate responders understood more about the content-related purposes of assignments. However, no student in the study consistently explained assignments in terms of the specific content, instead telling observers that "it's just our work" or "we learn to read". For those few instances where students were more specific about content, both poor responders and adequate responders were represented.

Conclusion. The poorer response patterns of the lower achievers can do little but perpetuate continued low achievement and frustration with classroom learning tasks. These data demonstrate graphically how the "the rich get richer, the poor get poorer" in classrooms. The long-term effects of poor response patterns are felt in both subject-matter achievement and in the development of more general metacognitive strategies.

Instructional research in classroom suggests that basic skills of reading and math are acquired most easily when most practice is at a high level of success and new material is introduced in small steps at a gradual rate, with time and practice enough to solidify new skills and concepts (Brophy & Good, in press). Yet in these six classrooms, the students who needed the most instruction in reading were the ones whose seatwork often had the exact opposite characteristics: it was difficult because the gaps between the student's knowledge and the knowledge required for the task were too great for the child to bridge independently. Thus, the large amount of their allocated instructional time that was spent

in seatwork was not contributing proportionately to their reading growth. Although some of their assignments did provide practice at a reasonable level of difficulty, much of their seatwork time did not contribute much to their learning about reading skills.

Just as important (although perhaps less obvious) is another long-term outcome that may be influenced by the seatwork experiences of poor responders: metacognition, especially metacognitive strategies involved in identifying difficulty and making sense of new or unknown situations.

The experiences of the poor responders suggest that one result of a combination of inappropriate (i.e., too difficult) assignments and an emphasis on completing work may be that students come to define success on seatwork in terms of completion instead of understanding. This way of defining success may occur for all students, but is more likely to be detrimental to students who have a difficult time with much of their work. In this study, these were students originally classified as low achievers. High achievers usually were more successful and thus were probably gaining more from the practice opportunities afforded by seatwork. As a result, the high achievers (compared to lows) may have come to <u>expect</u> their reading seatwork to make sense to them, because it was more often assimilable (or at their "independent level").

If this pattern continues, it may help the high achievers to develop adaptive learning-to-learn skills as they continue through school, because when something does not make sense or seems con-

fusing, it will be an unusual event. Therefore, it will be salient and likely to trigger action to reduce confusion and/or add necessary information. This highlighting of unexpected misunderstanding may help further the development of metacognitive skills (which aid in information-seeking to reduce confusion), even though formal classroom instruction seldom is focused on the development of such skills.

On the other hand, low achievers, who more often had assignments that were difficult for them, may be less likely to expect their work to make sense. Because sense or meaningfulness is not expected, a lack of sense (i.e., recognizing that you do not understand) is not unusual. If something is not unusual, then it is not as likely to serve as a signal that something is wrong and needs resolution. However, other elements of classroom life are probably more predictable to low achievers than assignments making sense. The rewards and sanctions attached to finishing work and covering content are very predictable, at least in the six classrooms in this study. Given unpredictability about how easily assignments can be comprehended, it is not surprising that low achievers may focus their immediate goals while doing seatwork on the predictable elements, such as the need to "get it done" and move on. Over time, this approach may interfere with the development of metacognitive skills that allow students to become better guides of their own learning.

Thus, higher achievers are more likely to learn more about how to learn from their assignments as they progress through

school, contributing to a widening gap between higher and lower achievers over time. This phenomenon can not be attributed entirely to the aptitude differences between high and low achievers (although those may be influential as well). The point here is that the history of a student's experiences with school tasks can influence expectations that assignments, text, instruction, etc., can and should make sense. These expectations in turn will influence a student's responses to difficult or novel situations, which determine what is learned from many academic (and other) experiences.

So far, the results have emphasized what happened to the students in the classrooms, but have not explained why, or, more important, suggested how the situation could be changed. The next section presents the data on the six teachers, and sheds light on how poor patterns of responses went undetected.

Teacher data

One of the most difficult aspects of classroom life for teachers is the multiplicity and simultaneity of classroom demands on their attention (Doyle, 1979). Thus, they cannot possibly observe students as continuously or as intensely as can an observer with no other responsibilities. For this reason, it is not surprising that these teachers frequently did not see the responses reported above. Indeed, it is typical that seatwork is conceptualized as necessarily an "independent" work activity that occupies one group of students so that teachers will be able to devote their full attention to another group. The results in this study do not deny any of the above teacher perspectives. However, they do suggest that the way the four basic instructional functions were construed and carried out in the six classrooms minimized rather than maximized some students' chances for making adequate responses. Additionally, routines associated with these functions often did not help teachers to obtain needed information about students.

An example from one of the narratives illustrates these points:

> It appears that Student 10 is finished with his workbook. He has done it rather quickly and he puts it in his desk drawer and zooms over to get drawing paper, since he is finishing copying sentences and now must illustrate them. He tries to read the sentence that he wrote for number one. He gets the "see" and "tip", but he can't seem to get any further and he spends

a great deal of effort trying to sound out the words "have" and "fun", but he can't get them. He says, "have," and it doesn't make sense to him, and he just can't get the word "fun." I can see that he is very uncomfortable about it and dealing with a lot of frustration. For a moment he looks like he is going to cry and then he does break out into tears. He decides to ask the girl across from him to help him read the sentence. He says, "Jessita," (mis-pronouncing the "c" sound in her name) and she looks away from him. He gets up out of his seat and then he sits down again. He is still crying and he says to himself, "I can't get number one." J finally reads it for him. She says, "See Tip have fun," and tells him to make Tip having fun. He says, "If I don't have it finished by 11:00. . ." and then lets the rest of the sentence dangle. I can see that as he starts to try the second sentence, he is coming to the same problem. He can't read the words. The sentence says, "Tim and Ben can go," and he just can't cope with it and starts to cry again. This time, a boy across the table and down a bit sees him crying and says, "What's wrong?" Student 10 says, "I can't read number two," and so the child reads it for him and says, "Just make them go any way," and Student 10 hurriedly makes a picture. He comes to the next sentence which says, "See

a green turkey." He reads the "See" and "a" aloud and then just struggles to try to get the word "green" and the word "turkey", but it's just hopeless. He asks J again for work. He says, "I'm on number four. What does it say?" And she responds, "Make the Mayflower go." He makes the picture, again hurriedly, and he looks up at the clock again and again to see how he is doing for time. A little boy to the left of him helps him with the next one because he is still crying and looking very distraught and so he has managed to understand from this little boy that this sentence says, "Jackie can have a red sack," and he makes a picture. Now, he's on number six and he tries again, struggling with every word. He gets "I", but he can't get any further. He tries the "l". The sentence really says, "I like a yellow turkey," but he can't get any further than the "l" sound on "like" and then he skips and says "a" and they "y-y-y", but he can't get the "yellow" and he can't get the "turkey", and he is just terribly distressed and still crying about it. Another student, S, walks by his desk and he asks her to help him with that, but what he has written for the word "like" on his page is "lik" and the little girl who walks by him reads it as "lick" and she's puzzled by this. She says to another student who is with her, "What lik spells?"

The other student says, "I like a yellow turkey."

Student 10 takes this in. He looks very surprised, as though he doesn't understand the meaning of the sentence. But he makes his picture in a relieved way and quickly takes his paper over and puts it in the box.

In the above example, Teacher C, busy with a reading group, was not aware of the frustration the observer was witnessing or the reasons for this frustration that related to task difficulty and the student's lack of strategies for getting help. Similar conditions and episodes were recorded in other classes, forming a common pattern, even in the classes of two teachers in the sample (C and D) who, during the teacher interviews, expressed their concern for student understanding and sensemaking regarding seatwork assignments.

Selecting seatwork assignments

Observational data showed that more than 60% of the assignments were given to the whole class in four of the observed classrooms. (See Table 2, variable 17.) For two of these teachers, the figure was over 90%. The remaining two still assigned at least one third of their seatwork tasks to the whole class. This probably accounts for the preponderance of too difficult seatwork encountered by the low achievers.

Because the research team was interested in teachers' thoughts regarding the assignment of difficult work, a question about challenging assignments was included in the interview.

When discussing assignments of high challenge, all teachers mentioned appropriateness for students as a dimension of their thought, but gave it lower emphasis than other dimensions. Two teachers, B and C, gave high emphasis to their goals in giving students work of high challenge but only teacher D gave high emphasis to the strategies necessary for student accomplishment of these goals. Teacher C reported that she wanted students to engage their own thought processes in more difficult assignments. (One example is the Weekly Reader assignment described earlier for Beth.) Observational data, however, suggest that this seldom happened in the case of low target students in that room, whose work on assignments of high challenge reflected low success. The teacher indicated pleasure, however, that these students showed at least a limited degree of understanding.

Even when seatwork was assigned by reading group, however, some students had problems with the level of difficulty. For example,

> Now Randy is back to writing: "Meg is getting the kitty." He stopped to think about what word goes in the blank, decides it's getting and then says out loud, "She said that would work." This showed me that he was listening, at least to this part of the directions, when the teacher was talking about the interchangeability of the words getting and patting in sentences 1 and 3.
>
> He starts reading: "She is," and then, instead of

reading the rest of the words in the sentence, he looks at all the choices and it will be remembered that there were two of these words in the beginning that caused him trouble.

At this point, he has no context for the sentence at all. All he has is "She is" and then he's looking at the choices without reading further. He tries to sound out the word talking and can't quite make sense out of it. He gets something like "Tel-king," and this makes no sense to him. This is the kind of frustrating situation that he can often be in with a sentence that makes him want to give up, copy off somebody else's work, ask them what to do, etc., because he's pretty much buffaloed by it.

I decide to intervene at this point and I ask him to read all the other words in the sentence before he tries to decide which word belongs in the blank. His attempt to get the word picture is such a laborious project that I would think that anyone who is analyzing this data should listen to it from the tape rather than a typed transcript, because you can't really capture the effort that's going into this and the difficulty of the task for him in sounding out this word picture and putting it all together to make sense out of the sentence. When he finally gets the word picture, he still has to be helped to see that the word talking doesn't fit into the sentence. He doesn't know that word and I help

him with it. After he gets it into his mind that the word is talking he can put it into the sentence and say, "She is talking out a picture," does not make sense. Then, I help him to see the word cutting at the very top of the list and he can easily see how cutting can fit into that sentence and make sense.

The nature of the assignments may have played some part in this. While one teacher relied on commercial materials entirely, the others used a mix of commercial and teacher-made assignments. There were many teacher-made assignments that were creative and interesting, there were also many that were flat in terms of meaning or context, as examples (a) and (b), below, indicate:

a). 1. Ben can ____ Mom. (have, help)

2. Meg can ____ a cat. (have, help)

3. Dad ___ not look. (come, can)

4. Mom ___ Ben can come. (and, can)

5. Tim can ____ help. (come, go)

6. Come and ___. (look, can)

7. You can have ____. (is, it)

b). Dan sits on a red box.

Ben has a red fox.

Jill has a brown sox.

David has a gray ox.

Another issue that relates to the difficulty level of assignments is the timing of seatwork assignments and formal teaching of the content. Boardwork assignments usually were not geared to reading group instruction, although most workbook assignments were. In at least one case, low targets seemed to have less difficulty with workbooks than with the teacher's own board assignments, which contained more difficult vocabulary.

In summary, the data on teacher selection of seatwork sheds light on why so many assignments were difficult for the poor responders. Many teacher selections of seatwork were made with the whole class in mind, so that lower achievers often lacked necessary skills and strategies. Even when assignments were given to ability-based groups, they were still difficult for some low reading group members. Some teachers saw value in challenging work, but only one teacher spontaneously discussed the need for teacher strategies to help some students deal with challenging assignments when those had been selected. Other factors that might influence task difficulty and student responses were the greater relative difficulty of some teacher-made assignments because of lack of context and lack of linkage to reading group instruction.

Presenting seatwork assignments

Table 2 summarizes data from in-class recordings of teacher presentations of seatwork assignments. The percentages of presentations with cues or "hints" to help students and those with

procedural directions were high (Variables 25 and 26). On the other hand, presentations containing statements of the purpose of the assignment, (Variable 21) and explicit descriptions of the cognitive strategies necessary for successful performance were extremely low and for some teachers nonexistent. These data are interesting in light of all students' inability to describe specific content-related purposes of assignments, and in light of the few task-relevant strategies used by the poor responders.

In the June interview, teachers were asked their opinion of providing students with some notion of the purpose of the assignment. Their answers indicated that most of the teachers had not given a great deal of thought to this question. For example, teachers stated:

Teacher B:

> Well, I think that is pretty typical, because perhaps we as teachers don't emphasize what a particular thing is that we're doing. I do, for example, emphasize like when we were doing the 'y' sounds, like cry and fry. I would say, "Well, we're talking about the 'y' sound that makes the sound of 'i.'" Or, I would say the 'ay' sound or the long 'a' sound. In that phonics work, I emphasized that, and then in the others, I would say, "We are learning these words as we're making sentences." Or, "We are learning to use these words." But ordinarily many times I would say a teacher probably doesn't even emphasize what they are learning. It's

just their work. I have a feeling that we're all guilty of that.

Teacher E:

You don't do that every time with a seatwork paper. There are times when you stop and pull that idea out, though, and say to the children, "This is what I want you to get out of it." Other times, you just expect them to know. I think we assume a lot, and I remember one time I was going to read a story called Meadow Brook Farms. I said, "What is a meadow?" No idea. So by the time I explained meadow and brook, I read the story the next day because we had already used all of our time allotment to get across a couple of concepts. If we go along assuming, and we do a lot of the time, you've got to pull it down.

Teacher C:

No, because that isn't a point of emphasis, at least for me. These things are repeated over and over. Hammer, hammer, hammer and they've got to be aware of what's going on.

Teacher D:

I would like to think that although you wouldn't say, "Now this skill we're going to cover today is finding the words

that have the ending sound 'ot' or 'at,'" or whatever, but, you know, why keep it from them? I think that I try to say, "Now all the words you're going to use today are going to have this sound, so look for that and let's remember," and sometimes we'd really ham it up and say, "Ad, ad, ad, ad," or, you know, just do different silly things with it that maybe when they got back to their seats or had it exposed a little bit later they could say, "Oh, yeah, that's the one..."

Observations of the six classrooms yielded other data about teacher presentations. Teachers often value student attention as a process variable, especially with regard to listening to directions. Three of the teachers in the sample had ways of signalling students that they wanted their attention, and some of these were creative and interesting. For example, one teacher (C) began presentations with a participation exercise: "Have you got your ears?" ("Ye-e-s, maam!") "Have you got your eyes?" ("Yes, maam!") "Here-we-go!" Another teacher always began assignment presentations with "I need watching eyes and listening ears." Other teachers did not signal in this manner, and the observer recorded instances of student talk and behavior during task presentations, indicating that their attention was elsewhere.

A strategy used by two teachers in the sample (B and E) was to elicit the explanation of the assignment from the students themselves.

When I write this, you know it's your group and you've learned to read this in your reading, so if you know if you're in the "Go Read" book or the "Get Ready" book, this is the kind of work that you're going to do, but I'm going to ask if somebody has a clue, because we haven't done this before. If you have a clue as to what I want you to do today, if you're in "Go Read" and "Get Ready," what do you think I want you to do? Well, what do you think I'm going to put in that missing line? Did you know what I was doing? What am I making? Boy, are you smart. You're making a pattern. Then, and then you write _____. Do you know what you're going to write next? Why don't you all help me read? Who can tell me, what does this mean to you?

"Here's a piece of paper. I want you to place these on your paper. What are you going to do first? Next? Who can show me?"

A standard form of explanation by two of the teachers was "going over it together." For example, a student would be called on individually to (1) read the words in a field and (2) read the sentences and fill the blanks. In other words, the students had a chance to learn what the answers were before the activity began if they could listen and remember. Observations showed, however, that the lower achievers were not always familiar enough with the vocabulary to benefit from this "one time through" exposure.

In some classrooms, no explanation at all was given for some assignments. In one classroom dittos were picked up by the

children as they entered with the assumption that they would start right away. In another the teacher taught the format in successive steps during the earlier part of the year. At a certain point, children were expected to know how to copy the sentences, fill in the blanks and draw the appropriate pictures, so that all the teacher said to the students was "You may get your reading papers."

Other observational data raise the issue of the percentage of time in the presentation actually devoted to explaining the task versus other considerations such as the communication of expectations about behavior and what to do when finished. One particularly telling example was the following:

> Now, if your hands are folded and you are looking at me, I will know that you are ready for directions. I certainly like the way this girl is ready, these two people are ready. I certainly like the way he is ready; in fact, Bo is beautiful, just beautiful! Let me see who else is ready? Okay, would you look this way, please? Would you look this way. Good boys and girls! Go read and get ready. We already know how to do this kind of paper, except (Mrs. B.) is looking for good detectives who can do a nice job of pictures and writing the words, and if Cindy and Theresa notice something, they had something on their name card. What did you have, Theresa and Cindy? You have a dinosaur sticker, and this tells us something. This tells them that

last week they had such beautiful words and pictures on their seatwork, and they worked so quietly without disturbing anybody that they had the privilege when their work is done that they can quietly, they may quietly read books, may get blocks to take to their seat. They may do those things because they have proven to Mrs. B. that they are doing a good job. Charlie, you need to listen! Now, when you have proved to me that you have good writing, you're listening to directions, you have nice pictures, we'll put a dinosaur on your name card. Watch for it. We're going to do two things: we will put your nice work up by your name AND we will put a dinosaur picture on yours, and then that means that you may go and play with those things. However, if I have to stop reading and say, 'Please be quiet,' I can't put a dinosaur sticker on your card because you're disturbing the room. You need to do your work without talking. Yes? (Answers child's question.)

"Okay, what letters are we going to look for in our Get Set book?"

"What do we see? Well, it is an insect. Another one? Ink. Another one? Igloo. And I think we won't go over all of them because of the time. The other letter we are looking for is--can you all say it? H! There are two things I want you to do. Remember, put your letter in the corner ane write your word and make your--that's three things--

make a picture. Letter, word and picture with your lips locked. When you are through, do you see on the corner of my desk I've put some paper? You'll see a box. What you do is come, make sure your name is on them and up there, it tells your name, put it in here. Fold it and put it in here and then you may get the clay out. While I'm passing the paper out, will my people in the 'Places and Puzzles' take your pencils and go up to reading."

In summary, the main issues regarding seatwork explanations relate to (1) whether or not explanations are given and (2) the nature of the explanation itself, i.e., whether references to purposes and cognitive strategies are included. Data indicated that they were not. Other issues are attention signalling, the balance of time between actual explanation and other considerations. Although there were differences among the teachers in routines for presenting seatwork, they were all similar in that most presentations were a matter of routine rather than an occasion to remind students about relevant skills and strategies and how assignments could contribute to learning.

Monitoring seatwork

The instructional function of seatwork monitoring is in many ways the most difficult of the four to perform adequately. This is due to the fact that in most classrooms, the teacher's attention is focused elsewhere while students perform seatwork.

Interview data about seatwork monitoring consist of responses to questions about (1) checking and returning papers, (2) preferences as to what children should do when stuck, (3) acceptability of students helping each other and (4) work skills considered in assessing students' progress.

Table 2 shows that those dimensions most emphasized by teachers in their thinking about student processes were persistence and completion of assignments (Variable 6) and effort and confidence (Variable 7). Students helping other students with seatwork (Variable 10) was very acceptable to three of the teachers and somewhat acceptable to the others, although there were few instances where formal systems of student helpers were in place.

Observational data also provide much data about monitoring and help-seeking routines. In three of the classes there were instances of teachers circulating around the room between reading groups and at other times when student work was in progress. One of the teachers allowed interruptions of the reading group of students with questions about seatwork. (Another teacher took the opposite position..."Unless you're dying, don't interrupt me in reading group.) Another, more facilitative pattern of monitoring occurred in the classroom of one of the teachers who was fortunate enough to have the assistance of two other adults in the teaching of reading groups, which occurred simultaneously: In this classroom, the observer noted examples of substantive

feedback to students about their seatwork which included re-explanation and questioning.

Observers did not see, in any classes, any evidence of existing procedures for teaching children self-monitoring (i.e., checking to see if work made sense).

In short, there is some evidence for monitoring of performance across the sample of teachers. However, this was not usually the occasion for substantive feedback that contributed to student understanding (except for one case, where an aide was also present.) Observations did show, however, that most of the teachers gave verbal feedback to the students about their behavior and attention to task that equalled or exceeded the amount of performance-monitoring. In fact, four teachers imposed penalties (not going to lunch) for failure to complete work, and attributed failure to finish to sociability or "immaturity." However, as observations of students reveal, delays may not always be due entirely to student inattention or misbehavior, as the first anecdote about Student 10 indicates on page 40.

In sum, systems for monitoring students during seatwork time were geared to gather information and provide feedback on student behavior and attention to task rather than student understanding and performance. Help-seeking systems were usually not formal and predictable, so that an individual student who was experiencing difficulties could not know for sure whether and when a reliable source of help would be available. (There were occasional

exceptions to this, especially Teacher A, who would offer help at the end of the morning's worktime. However, that meant that the lower reading group, who had seatwork time first, had to wait over an hour.) This was not a problem for the adequate responders, who seldom needed help, but the lack of assistance may have contributed to the poor responders' reliance on their own maladaptive strategies in the face of difficulty. Also possibly contributing to this outcome were teachers' communicating to students their valuing of persistence, independence and task completion, all of which assume that work is "doable" by the students.

Evaluation and Feedback to Students

In addition to information regarding the checking and returning of daily papers, interview data provided information about what the teacher looked for in terms of overall progress.

Most of the teachers indicated that papers were checked and returned to students within one day. Observational data suggested, however, that teaching evaluation was based primarily on accuracy and neatness of the product.

The data on teacher thinking relative to student progress bears mentioning again under this heading. Only one teacher in the sample (D) emphasized sensemaking more than assistance, effort, and independence. Thus, most feedback to students (and possibly parents) also emphasized persistence, effort and independence, all of which are factors presumed to be under the control of students.

A related set of interview data describe teacher attributions for success (Table 2, Variables 11, 12, and 13) and failure (Variables 14, 15, and 16). When considering student success, two teachers, E and F, attributed higher percentages of success references to student-controlled variables than teacher-controlled variables, while the opposite was true of three others, with one splitting evenly between teacher and student-controlled factors.

As regards references to student failure there was a strong trend to attribute failure to student-controlled factors with the exception of Teacher A and, to some extent, Teacher D. Thus, although the teachers sometimes saw themselves as contributing to student failure to complete assignments correctly, they tended to hold the student responsible for many instances of such failure. In cases of poor responders faced with difficult tasks, the attribution of off-task behavior or poor performance to lack of effort or caring seems unfair to say the least. However, the teachers usually did not see the patterns of responses seen by the observer, and so their attributions are based on less information.

In summary, the issues that appear to be most important regarding evaluation and feedback to students are (1) the possible overemphasis in evaluation on a product with deceptive indications of student understanding, (2) the notion of giving possibly inappropriate feedback to <u>try harder</u>, to <u>listen</u>, or to <u>work more</u> instead of playing or socializing and (3) the de-emphasis on student understanding as a valued outcome in assessing student growth.

Conclusions. Before drawing any final conclusions concerning the four instructional functions of selecting, presenting, monitoring and evaluating students' seatwork, a few general comments are in order. The observational data were much richer than may be apparent here, and included descriptions of creative, perceptive and humanistic arrangements and activities that occurred in these classrooms to facilitate student learning. All of the teachers were concerned about children learning to read and were interested in our research as a way of increasing their own knowledge. Thus, these results should not be interpreted as blanket criticism of the six teachers, who were committed, caring, and conscientious individuals.

As has been previously mentioned, teachers do not have the luxury of making sustained and detailed observations of individual student processes, especially during seatwork times. Therefore, it is not surprising that they were unaware of the limiting effects on students of some of the less-than-ideal conditions reported in this investigation. Teachers usually had reasons and rationales for their thoughts and actions that made logical sense on the basis of the data available to them and their own implicit theories of how children learned. The value of this study will be to provide teachers with additional data and alternate conceptual schemes on which to base their decisions about the four instructional functions related to seatwork. It should not be construed as yet another expose about "what's wrong with teachers."

The data suggest that seatwork as it is typically handled often has unintended consequences for those students who need the

most from the teacher--the lower achievers. These unintended consequences stemmed mainly from (1) assignments that were too difficult for some students to handle independently without frustration when supporting instruction and immediate assistance is not available, and (2) a focus (by both students and teachers) on processes such as persistence, effort and task completion rather than understanding.

Some suggestions for teachers: Making seatwork work. Teachers who wish to maximize the possibility that low achievers will benefit from their independent seatwork assignments may be interested in the following suggestions regarding the four instructional functions.

Selecting assignments. Independent work may either be at a level where students can really do it independently, preferably at about 95% success rate, (Brophy & Evertson, 1976) or adequate provisions should be made for students to identify difficulty and obtain help. For poor responders, this may mean selecting assignments that occur soon after instruction on the particular skill if it is new, and emphasizing the importance of taking steps to resolve confusion, understand text, and "make sense" of tasks.

Presenting assignments. Explanations that highlight what the students are learning and why it is useful may contribute to student understanding of the task. Work in progress by Duffy, Roehler, and Book (1982) indicates that such explanations do indeed affect students' understanding of purpose, which, hopefully, helps them focus their attention on relevant aspects of the task. For low achieving students, teachers might model how they them-

selves would think about the task. Presentations might also contain statements about what students should do when "stuck," and about the need for the assignment to make sense. It would not be enough to only change teacher presentations without also modifying task selection, monitoring, and help-seeking mechanisms, but explicit presentations could provide students with the information they need to take advantage of alternate organizational patterns.

Monitoring assignments. Obviously, the need for monitoring, which is the most difficult function for teachers to perform, will be minimized if there is a good match between the student and task difficulty and if explanations are as explicit as necessary for a given student. However, knowing which students are most likely to need monitoring and making contact with them early in the seatwork period in order to provide substantive feedback would be beneficial. It is important to recognize that the effectiveness of explanations depends on the listening comprehension of the student, who may lack the necessary cognitive structure to understand and remember all terms and steps given the first time through. That is, failure to remember and follow directions may not be due to student's unwillingness to pay attention. Some children need help in the form of timely teacher monitoring, to make sure that they have necessary information to complete assignments meaningfully. Questions and statements to students during work in progress about understanding may be more profitable in the long run than statements about behavior, persistence and task completion. Finally,

provision of a sense-making or checking function with a "learning partner" may be desirable and would allow the teacher to provide other resources to children than herself or himself. However, data from this study suggest that such a learning partner system would have to be set up carefully, with children taught how to help one-another and not just give answers (as occurred with Randy, whose teacher often designated an individual on the spur of the moment to help another child.)

Feedback and evaluation. The point has been made abundantly about the value of two-way feedback between student and teacher about the mistakes of poor responders. Perhaps an appropriate maxim might be "stars (and X's) are not enough." Data in this study suggest that teachers may wish to reflect seriously on the attributions they make for student success and failure, taking into account some of the reasons identified here for poor performance. Finally, the methodology of this study highlights the desirability of bringing in an outside observer--a parent, a principal, or another teacher--for focused observations of children who consistently respond poorly in their seatwork assignments.

Future Directions

The Student Response Study was conceived originally as an effectiveness study, in which the variability between classrooms and teachers could be related to differences in students' patterns of responses to seatwork. Although the sample size was low for an effectiveness study, it was felt that there would be sufficient

teacher differences to allow for case study comparisons that would illustrate dimensions of effectiveness with rich anecdotal student data. However, seatwork in the observed classrooms was handled in similar ways, so that there was little variance at the classroom level on variable that had been hypothesized to be critical. However, within-class analyses revealed that a common pattern existed in all six of the observed classrooms: higher achievers were more likely than lower achievers to respond to seatwork in a manner that could facilitate learning. It is impossible with these data to determine causes of these student response patterns, but certain patterns of teacher behavior and thinking seem reasonably related to the observed student patterns. These hypothesized relationsips and possible long-term consequences of student response patterns were described in the "conclusion" sections of the Results.

Thus, the major result of the study has not been a set of clear relationships between instructional practice and student outcomes. Instead, and perhaps more important, the major outcomes of the study have been a new set of questions to ask about students doing seatwork and a way of thinking about the short term and long term effects of seatwork.

Hopefully, such conceptual outcomes will benefit both practitioners and researchers as they think more critically about issues such as time-on-task, daily performance on assignments, the emphasis placed on independence versus help-seeking, and the meaning of "trying hard". Some of the research staff have used concepts and anecdotal data from the study in teaching courses and conducting workshops for teachers. In several instances, the results have been gratifying. For example,

experienced teachers remark that they now think differently about monitoring and feedback, and prospective teachers demonstrate that they are learning to probe students' undcrstanding of task expectations and circumvent some low achievers' maladaptive strategies.

Given some success with such informal interventions, the next step is to use some of the ideas and insights from this study in a more systematic way to work with teachers who wish to learn new ways of seeing student responses and organizing their classrooms to insure a clearer flow of information about student understanding about their independent work. As was noted earlier, the teacher's task is an extremely complex one, especially when a class is large and heterogeneous, and carrying out the four functions of seatwork is not easy. For these reasons, it would be very worthwhile to investigate systematically the effects on both teachers and students of helping teachers to become more aware of the responses of some of the low achieving students observed in this study, and the possible relationship with the ways that seatwork is handled by the teacher.

Footnote

[1]The two so-called "individualized" classrooms were different from the other classes in so many respects that they were not included in the major analyses reported here. However, the patterns of student responses that were found for the other six classrooms were also evident in the two individualized classes when student anecdotal data were reviewed.

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Table 1: Students' Attention and Performance Ratings

Students	Response Category	Student Characteristics		Time Observed					Attention Ratings[2]			Performance Ratings[3]		
		Sex	Initial Reading Group	Total (mins.)	Total No. of episodes	Seatwork (mins.)	No. of Seatwork episodes observed	No. of seatwork tasks w/performance data	Mean	S.D.	% of ratings below 4	Mean	S.D.	% of ratings below 4
Classroom A														
Student 1*	Poor	M	Low	277	55	88	19	28	3.98	1.18	21	4.11	.96	26
" 2	Poor	F	Low	191	47	89	21	27	4.38	.96	18	4.33	.96	23
" 3	-	F	High	(student moved during year)					-	-	-	-	-	-
" 4*	Adequate	M	High	344	66	76	26	28	4.75	.57	6	4.89	.32	0
Classroom B														
Student 5	Mixed	F	Low	122	32	44	11	10	4.72	.84	7	3.70	1.42	40
" 6	Mixed	M	Low	201	36	104	17	13	3.89	1.12	30	4.69	.48	0
" 7*	Adequate	F	High	86	12	53	7	9	4.75	.45	0	4.78	.67	11
" 8*	Poor	M	High	195	36	93	13	10	3.62	1.56	47	3.50	1.43	40
Classroom C														
Student 9*	Poor	F	Low	124	23	84	15	9	4.30	1.02	17	2.78	1.72	56
" 10	Mixed	M	Low	191	29	117	19	14	4.50	.69	11	4.00	1.41	21
" 11	Adequate	M	High	107	16	62	8	17	4.69	.60	6	4.82	.53	6
" 12*	Adequate	F	High	284	28	86	11	25	4.61	.73	14	4.92	.28	0

Table 1: Students' Attention and Performance Ratings

Students	Response Category	Student Characteristics		Time Observed					Attention Ratings[2]			Performance Ratings[3]		
		Sex	Initial Reading Group	Total (mins.)	Total No. of episodes	Seatwork (mins.)	No. of Seatwork episodes observed	No. of seatwork tasks w/performance data	Mean	S.D.	% of ratings below 4	Mean	S.D.	% of ratings below 4
Classroom D														
Student 13*	Poor	M	Low	243	22	93	7	7	3.55	1.05	45	2.71	1.50	71
" 14	Poor	F	Low	235	45	77	18	20	3.73	1.03	34	4.35	.93	20
" 15	Mixed	M	High	165	28	43	10	16	4.18	.72	18	4.31	.60	6
" 16*	Adequate	F	High	116	28	30	12	20	4.78	.42	0	4.60	.60	5
Classroom E														
Student 17	Poor	F	Low	148	20	99	13	12	3.47	1.07	63	4.25	.97	17
" 18	Mixed	M	Low	398	51	133	20	18	3.48	1.03	58	4.83	.51	6
" 19	Adequate	M	High	208	29	102	13	11	4.54	.58	4	4.91	.30	0
" 20	Adequate	F	High	176	28	86	16	14	4.75	.45	0	4.86	.36	0
Classroom F														
Student 21	Poor	M	Low	104	17	35	4	9	4.17	1.19	25	4.33	1.32	22
" 22	Poor	F	Low	142	25	72	11	3	2.74	1.41	68	insufficient data		
" 23	Adequate	F	High	162	21	91	12	12	4.71	.78	10	4.50	.67	8
" 24	Mixed	M	High	243	28	131	15	11	4.32	.98	21	4.55	.93	9

*Students for whom case studies are included in Appendix.
[1]Patterns of responses were categorized according to procedures discussed in the data analysis section of this paper.
[2]Attention rating means are based on the total number of episodes.
[3]Performance rating means are based on the number of assignments for which performance data were available.

TABLE 2

Teacher Characteristics

	Teachers					
	A	B	C	D	E*	F
Interview Scores[1]						
Student outcomes						
1. Emphasis on discrete skills and accuracy without reference to comprehension (6)	3.5	2.8	2.3	2.0	3.2	4.0
2. Emphasis on comprehension and sense-making (5)	1.7	1.3	2.7	3.7	2.5	1.3
3. Emphasis on neatness (3)	1.0	2.6	2.7	2.7	3.5	3.0
4. Emphasis on creativity (2)	1.5	2.0	2.5	3.0	1.0	1.5
Student Processes						
5. Emphasis on persistence, completion of assignments (3)	3.3	3.0	3.7	2.3	3.3	2.3
6. Emphasis on effort, confidence (6)	3.0	3.0	2.6	3.0	1.3	2.0
7. Emphasis on behavior, cooperating with teacher (2)	2.5	2.0	2.0	1.5	3.5	2.0
8. Emphasis on student paying attention (2)	1.5	2.0	2.5	1.5	1.0	2.0
9. Acceptability of students helping one another with seatwork (2)	2.0	5.0	2.0	3.0	5.0	5.0
Attributions for success						
10. Number of attributional statements about success that were coded	15	24	11	18	18	11
11. Percent success references attributed to student controlled factors	27	29	10	17	50	45
12. Percent success references attributed to teacher-controlled factors	27	46	50	50	28	27

TABLE 2

Teacher Characteristics

	Teachers					
	A	B	C	D	E*	F
Attributions for failure						
13. Number of attributional statements about failure that were coded	19	31	3	19	29	16
14. Percent failure reference attributed to student-controlled factors	6	32	33	25	48	50
15. Percent failure references attributed to teacher-controlled factors	22	6	0	19	7	6
Characteristics of assignments						
16. Percent seatwork assignments given to whole class	71.9	62.9	36.4	33.3	98.1	91.9
17. Percent seatwork assignments based on reading group membership	28.1	31.4	47.7	66.7	1.9	2.7
18. Percent seatwork assignments that were individualized	0	5.7	15.9	0	0	5.4
19. Number of seatwork presentations which were recorded and coded	52	20	20	16	19	9
Percent of coded presentations that included:						
20. Explicit statement of purpose	9.1	0	5.0	6.3	0	11.1
21. Reference to specific content	52.7	20.0	10.0	12.5	15.8	44.4
22. No reference to purpose or content	38.2	80.0	85.0	81.3	84.2	44.4
23. Explicit description of cognitive strategy	1.3	3.8	0	4.0	0	0
24. Cues to help students	51.3	42.3	17.2	24.0	48.3	26.7
25. Procedural directions	28.9	34.6	48.3	52.0	27.6	60.0

TABLE 2

Teacher Characteristics

	Teachers					
	A	B	C	D	E*	F
26. Form requirements	5.3	15.4	17.2	20.0	10.3	13.3
27. No information other than location of assignment	13.2	3.8	17.2	0	10.3	0

*Teacher E's data is based only on the Winter interview.

[1]Interview scores represent averages of separate ratings (5-point scales) that were similar in meaning to each other. The separate rating scales that make up each score are listed in the Appendix.

Table 3

Frequencies of students with poor, mixed, and adequate response patterns classified by achievement level and sex[1]

	Poor	Mixed	Adequate
Reading group at beginning of the year			
High	1	2	8
Low	7	4	0
Student Sex			
Male	4	5	3
Female	4	1	5

[1]N=22 students. One student originally classified as a low achiever had too few seatwork assignments available for scoring to justify classification. However, other data on the student suggest that she is more like the poor responder group than the others.

Appendix 1

Student Case Studies

Classroom A, Student 1: Sean
(Pattern of poor responses)

Sean was originally placed in the lowest level reading group and remained there during the year. His teacher described him as a real "overachiever" who accomplished a lot with what she saw as limited mental ability. During the observed seatwork sessions, Sean usually looked "on-task," although he often performed poorly and frequently demonstrated inadequate strategies and/or conceptual understanding for successfully completing the seatwork tasks.

Ease of answering and awareness of difficulty

Sean often lacked basic knowledge necessary to do seatwork assignments on his own. However, on at least two occasions when he initially seemed not to know how to proceed (e.g., solving subtraction problems), when the observer went slowly through the process and questioned him at each step, he could answer correctly, which suggests that poor performance may have been due to an inability to sequence all necessary steps in the process despite knowing the subskills. Even when he did demonstrate that he knew what was necessary to solve a problem, he was often slow and not automatic about certain basic skills (e.g., he did not recognize immediately that all fingers on one hand counted as "5"; he would slowly count them for each problem.)

He did seem to understand what was most difficult for him, in that he identified those assignments on which he performed poorly as "hardest," even before the teacher marked them. However, recognizing that something was difficult did not always lead him to seek help or clarification, as demonstrated in the next section.

Strategies for doing assignments

Sometimes Sean used strategies appropriate for a given seatwork task. For example, several times during the year, he was observed talking his way through both math and reading assignments, although this was usually limited to assignments that he could do easily and quickly (e.g., some of the beginning sound dittos, or single-digit addition problems after he had memorized addition facts). Early in the year, he was observed looking toward color words posted on the wall of the room as he did a worksheet on color words (i.e., he could match the words on his paper with the color charts on the wall before choosing his crayon). Once, after asking the teacher for the name of a picture (for a worksheet on which he was to mark pictures beginning with a certain sound), he repeated it to himself on the way back to his seat, indicating a rehearsal strategy for short term memory. The most clear-cut use of an effective and appropriate strategy was his performance on a scrambled sentence assignment in April. This was the third time he had done such an assignment, and he had learned that the object was not to copy the words in their original order, as he had done the first time the assignment was made. During this particular observation, Sean read the sentences to himself as he composed them, reread them, showed signs of confusion when they did not sound right, and kept trying various combinations of words until the sentence made sense to him.

However, there are many other examples of Sean using inadequate strategies, although in all cases, he completed the assignments. For example, on one page that required him to select one of two pictures that went with a sentence, Sean allowed a boy next to him to change one of his answers and then to complete the rest of the page for him, resulting in four incorrect answers out of five. Sean did not defend

himself or question the boy's answers, even when the teacher marked them in his presence. On another occasion, Sean had incorrectly marked three out of five pictures on a similar worksheet, and the teacher marked them wrong while he watched. The observer later asked Sean to read the sentences, and he misread the key words, which led him to mark his original choices. Thus, his picture selections were correct as he had read the sentences, but he did not question why (and could not tell the observer why) the teacher had marked them wrong. These two examples suggest a passive response in the face of failure with no attempts to "make sense" of the feedback from the teacher.

Another example of Sean's passive acceptance of misunderstanding occurred when he completed a ditto page about the seasons. Students were to match names of the four seasons to pictures of seasonal activities. Sean worked through this assignment intently, making errors on six out of the eight choices. For example, he pasted the label "summer" under a picture of a child sledding. When the observer talked to him about the assignment, he could not read the names of the seasons and seemed unsure about when one went sledding, swimming, etc. However, he had done the assignment quickly, without seeking any help. (Later, the teacher indicated that this assignment had been used because the "highs" needed it, and Sean "should have known" because she had discussed seasons with them the day before.)

During a creative writing assignment in the spring, the students were to spend their thirty minutes of independent seatwork time composing a story about "My Family." (The teacher had begun to use one morning a week for creative writing assignments; this is the second week.) She wrote on the board some words that could be used in

writing a story about "My Family," although she emphasized that spelling "does not count." Sean wrote the following story by himself:

You can be my brother.

You can be my puppy.

I like my pup.

I like my father.

I like my mother.

I am happy.

When the observer asked him to read his story to her, he hesitated on the word my (because his y was not clearly a y and he read it as a t). He did not attempt to read the words brother, puppy, pup, father, or mother; instead he stared at each of them for several seconds and they asked what they were. After they finished reading his story, the observer asked him how he knew to write the word father where he wrote it. He pointed to the board and said, "I got it off there." His story was later marked "good" by the teacher as she quickly read it during feedback time.

During a May observation, he worked on two fairly complex assignments. One was a "following directions" worksheet (e.g., a series of dwarves on a trail, with directions like "color the first dwarf's cap blue.") He had colored in the first few items incorrectly. When the observer asked him to read the directions to her he could not read most of the critical words, such as dwarf's and first. However, when the observer supplied the words so that he could read the whole sentence, he immediately realized that his answer was incorrect and jumped up to get a clean ditto. On that same day, he completed a math page about

place value correctly. He knew where to put numbers in the blanks (e.g., "___tens and ___ones") but he could not read the words tens and ones. In response to the observer's questions, he did not seem to understand the concept of place value. However, he had learned how to use the format of the workbook page in order to come up with the right answers.

Help-seeking. In all of the instances just described, Sean did not seek help, although it is not clear that he realized that he needed help. However, Sean was willing to seek help from the teacher or observer on some occasions. These usually occurred when the question was relatively simple, often involving a single association, such as the name of a picture in a worksheet where he was to color all pictures that started with a certain letter. With other reading and language assignments, he usually would go ahead and write answers, even when he could not read the words or directions. He approached the observer and teacher for help with math more often than reading, and on these occasions he seemed very frustrated about not knowing how to proceed.

Attention to finishing and understanding of purposes of assignments

Sean did not talk a great deal about finishing, nor did he seem concerned about the other students' progress on seatwork. There were only occasional comments to himself about how many he had left to do, although on the day that he had successfully completed the scrambled sentences assignment before his allotted seatwork time was over, he seemed quite proud of himself and mentioned twice to the teacher that he was "done." Although finishing did not seem to be a preoccupation while he worked, he usually demonstrated relief once the teacher had

checked his papers and he was released for playtime, and when he had to correct his papers before he could play, he did this hurriedly and with a pained expression.

Sean was not often asked about the purpose of assignments. For one assignment on beginning sounds, he said that he was learning about letters from doing the page, which seems appropriate. However, on two other occasions when asked the same questions, he stated that the purpose of doing the work was "to get smart" or just that "that's our work."

Classroom A, Student 4: Dexter
(Pattern of adequate responses)

Dexter was originally placed in the highest level reading group and remained there during the year. His teacher described him as a smart child, but one whom she felt had various personal problems due to his home situation and diagnosed hyperactivity. (He was medicated during the school day.) He usually looked "on-task" when doing his work, and almost always had completely correct seatwork papers.

Ease of answering and awareness of difficulty

Dexter almost always completed his seatwork assignments quickly and correctly. When he was asked to read them or explain something to the observer, he did so with ease, and even slipped into a teacher role, trying to get the observer to work through the problems. Whenever he was asked to read, he did so fluently. When observed with a creative writing assignment, he not only composed and wrote the story quickly and easily, he did so with apparent enthusiasm, saying in an aside to the observer as she passed, "This is fun!"

He quickly identified most assignments as "easy" except for some pages about long and short vowel sounds, which he said were harder for him. This assessment corresponded to his performance, in that the vowel pages were the only assignments where he had many errors.

Strategies for doing assignments

Because Dexter performed his assignments so quickly and easily, there was little observable evidence about strategies used. When questioned about how he had done something, he often played teacher and told the observer that she could figure it out herself if she tried.

What available evidence there is suggests that his strategies were appropriate and based on an understanding of the skills or concepts being applied. He talked to himself a great deal while working through assignments. He occasionally used his fingers for math problems. When doing a crossword puzzle (the first time it was assigned in this class), he drew lines from the list of words to the clues before filling in the puzzle, which he then completed correctly. During an interview on April 7, after he had finished his work, he was asked why he had used his fingers on one of the math problems. He said he couldn't remember which math problem that had been but that "it must have been a hard one." This suggests that he understands that such aids are especially important with harder problems. In the same interview, Dexter was asked what he had been thinking about when doing an assignment that required students to fill in ending sounds for words. He said that he did it by thinking in his head what the ending sounds were, which again suggests that his correct performance on seatwork was grounded in knowledge of appropriate metacognitive strategies.

Help-seeking. Because most of the work was very easy for Dexter, there were not many occasions on which he sought help or needed to seek help. Occasionally he asked the teacher to identify pictures (for beginning sound dittos where students marked all pictures that began with a certain sound) and once during a creative writing assignment, he asked the teacher how to spell the word "terrific." Other than this, no instances of help-seeking were noted. The only kind of assignment on which he made many errors involved vowel sounds. Here he was not observed asking questions, even though later questioning by the observer revealed that he did not always understand what determined the different

categories of vowel sounds and considered these "hard."

Attention to finishing and understanding of purposes

There were more instances of Dexter attending to finishing than Sean. Dexter often made public statements to the teacher about being "done." At other times, he was observed checking with students around him about how far they were on a certain ditto.

When Dexter was asked questions about why the teacher gave him certain assignments, a common answer was "to learn." Sometimes he focused on the easiness of the assignment: "to show me that I could do it." There were no specific content-related purposes given to direct questions of "What are you learning about here?," but at other times, Dexter described the vowel assignments in terms of the specific content covered (e.g., "This page is all about short a.").

Classroom B, Student 8: Randy
(Pattern of poor responses)

Randy was originally assigned to the highest level reading group, but was moved down to the second lowest reading group (out of four) during the year. His teacher described him as an uncooperative child with aggressive tendencies and possible emotional problems. He received many behavioral corrections and criticisms, and was observed "off-task" frequently. As the year went on, he became more persistent with his seatwork, possibly due to increased pressure from both home and teacher to improve his behavior.

Ease of answering and awareness of difficulty

Most of the observations of Randy doing seatwork were during the standard daily boardwork assignment. The teacher would put up four to six sentences with blanks, and place a list of words alongside the sentences. These words were usually new vocabulary words. Students were to copy the sentences with the correct words in the blanks. Usually the teacher would read all sentences and words when explaining the assignment.

While doing this type of assignment, Randy often could not read the new words, and thus could not figure out what to put in the blanks. (He occasionally also had difficulties reading the sentences.) However, when he could read the words and remembered to read the whole sentence before making a choice, the process of picking the most sensible word was easy for him. In an April interview about this type of assignment, Randy readily told the observer that he had trouble with "new words," which was an accurate perception. In contrast to his halting performance

on the boardwork, he quickly and successfully completed workbook pages that required a simpler form of response (making a single mark or drawing a picture) and that had more familiar vocabulary.

Strategies for doing tasks

The most prevalent strategy used by this student when doing the standard boardwork assignment (and some others) was to ask another student for the correct answer. Other students readily told him the word to go in the blank, and he would copy it quickly. Sometimes he was observed talking to himself as he would read the sentences and saying letters to himself while copying, and he did try to sound out new words, although he quickly would become visibly frustrated and turn to another child for help. During the April observation, no one was sitting near him, so the observer was able to see what he did on his own. He copied down the first two words of the sentence, then drew the blank for the third word, and then began to scan the list of words for one to fill in the blank (without any indication that he had read the rest of the sentence.) On another occasion, when the observer asked him to read a new word to her from his paper, he could not read it until she suggested that he read the whole sentence and see if he could figure it out, and then he was successful. These two examples suggest that he did not use sentence context spontaneously as a source of information for reading unknown words or making the selection. However, his performance on these occasions when the observer suggested a strategy ("read the whole sentence") and supplied him with unknown words suggested that he could make sense out of the sentences and use knowledge of context, even though he had not done so spontaneously.

Help-seeking. As noted above, help-seeking was a key strategy used by Randy. He almost always asked other students instead of the teacher. In fact, on two occasions, the teacher was near him when he was having difficulties reading a word. Instead of asking her, he turned to another child as soon as she moved on. If another child refused a request for help, Randy would keep on asking or go to someone else, but was not easily discouraged in attempts to get assistance. In the January observation, he was so persistent about asking one boy that the teacher noticed from the reading group, and told the boy to help Randy with the words that he could not read. The boy not only read the new words, but also supplied the answers for the blanks. This same tactic was demonstrated when the class had a worksheet that presented simple logical syllogisms, where the students were to mark one of two pictured choices for the conclusion. Randy read the premises, then said, "I don't get it," and turned to someone else for the answers. The other student obligingly supplied all of the correct choices. In April, when students were to finish a story about rain, he wrote one sentence, for which he asked a friend to spell all words except I, by, and the.

Attention to finishing and understanding of purposes of assignments

The observer noted her impression that Randy always seemed to want to get finished and get the work out of the way; seatwork was a real trial for him. For example, during one observation in December, he was heard talking to himself about "only one more to go," and as soon as he finished his work, he quickly jumped up, crumpling his paper because he grabbed it so fast, and literally threw it in the basket. During a

January observation, he sighed with great relief that "it's done," and during a March observation he exclaimed with delight when he finally finished his paper. During the April observation, he told the observer that he did not like to write stories (one of his assignments for the day), because "it takes so long, and then I can't play." When he did not finish his work early enough, he did not get play time.

Randy was only questioned once about the purpose of assignments. When asked why the teacher gave them the boardwork assignments, he said "so I can learn." When asked what he was learning, he said, "Words." The observer asked, "New words?" and Randy replied, "She puts them in, but I always get stuck on them," which was an accurate summary of his experiences with this type of assignment.

Classroom B, Student 7: Cassandra
(Adequate pattern of responses)

Cassandra was originally placed in the highest level reading group and remained there throughout the year. She was remarkably consistent from one observation to the next, and always appeared to be a quiet, conforming child who enjoyed all classroom activities. She was always attentive to task, and almost always completed her assignments successfully. The teacher saw her as a pleasant student who worked hard despite a "poor family background" and vision problems.

Ease of answering and awareness of difficulty

Cassandra did all of her work easily and read fluently. When doing the standard board assignment, she was observed even in the first half of the year (when some students are still copying letter by letter) to be copying entire words or short phrases at one time, indicating that she saw and remembered them as meaningful chunks. There were no entries indicating that she ever considered her work difficult, or one kind of work harder than any other, but this question may not have been asked directly.

Strategies for doing the work

Little evidence was available about specific strategies used by Cassandra. As noted above, she copied words in units, which seems to be a sensible and efficient approach to a copying task. She was observed using her fingers as counting aids when doing a math page. The only time that an inappropriate strategy was demonstrated was when she did not know how to do a direction-following ditto that had been placed on students' seats before school, and Cassandra entered the room before

the teacher could explain it. Cassandra wanted to start immediately, asked the boy beside her how to do it, and then started coloring the ditto exactly as the boy did (which was incorrect) rather than reading the directions and following them. However, once the teacher entered the room, Cassandra immediately asked her what to do.

Help-seeking. The incident just described was the only instance observed of help-seeking, and the only time when she appeared to need help.

Attention to finishing and understanding of purposes of assignments

The observer noted that Cassandra always worked carefully, not appearing to hurry to finish. There were no instances of her remarking on her progress or comparing the amount completed with other students.

Cassandra was never asked directly about the purposes of assignments, and gave no other clues about her understanding of this.

Classroom C, Student 9: Beth
(Poor pattern of responses)

Beth was originally placed in the lowest level reading group and remained there. Her teacher indicated to the observer that she "does not process...she takes everything off the top of what you say, but there's just nothing in-depth." She was usually attentive to her seatwork although she managed to mix it with social interaction. Her seatwork assignments contained several errors.

Ease of answering and awareness of difficulty

Beth seldom showed signs of having difficulty while doing seatwork, although her work contained many errors. On two occasions, when the observer questioned her about answers that were incorrect (although not yet marked), Beth seemed uncomfortable, as if she realized the answers were wrong, but, according to the observer, only wanted to put the work away and be done with it. On boardwork, she copied easily, transferring whole words to her paper quickly. Sometimes she could read the boardwork sentences, but sometimes stalled on a word. In workbook assignments, she sometimes read easily but at other times did not know several words. Her least fluent performance was during the whole-class Weekly Reader assignments, where she skipped over several important words (e.g., friends, spring, some) while reading aloud to herself or to the observer. (This task involved copying questions off the board, then composing answers based on the Weekly Reader articles.)

Strategies for doing work

When copying the regular boardwork assignment (i.e., copy sentences with blanks, copy the three choices, then write correct choice in blank),

Beth often said the words to herself while she wrote, and read the sentences aloud before making a choice. However, this was the only evidence of clearly appropriate strategies observed for Beth. In other assignments, she sometimes seemed to lack a strategy, such as with a word search puzzle, where she looked intently at the array of letters but seemed to have no systematic plan for search. On two workbook assignments, she seemed knowledgeable about form requirements but did not note that her answers did not make sense. For example, one reading page contained sets of three sentences which as a group were to be matched to one of three pictures. Beth quickly drew a line between each sentence and a picture, which made for some illogical connections. Similarly, on a math workbook page with number lines to be used to illustrate addition problems, she quickly drew arrows that had no correspondence to the problems given. She cheerfully explained to the observer, "You gotta draw these lines. You hafta start at zero. This is easy." On another reading workbook page, she could not figure out one sentence, and so she initially skipped it. Then, on the basis of the last remaining picture, she figured out what the key word was, but had not been able to use sentence context alone as a clue.

The most significant problems related to lack of strategy occurred with two Weekly Reader assignments given in April. On each occasion, students were to copy questions off the board, read the Weekly Reader article for the answer, and compose a complete sentence to answer the question. Beth's only observed attempt to use the text as a source of information was to a question about the number of a grasshopper's legs. In response to this, after seeing others at her table look in the article, she also looked through it until she came to a number word: five, for

five eyes. She selected this out of context and wrote it on her paper. For other questions, she generated answers that were reasonable but not based on the article. (She had been unable to read many of the words in the article.)

Help-seeking. Despite frequent poor performance, Beth did not often seek help. The only occasion noted was a request to the observer to confirm a word on the board.

Attention to finishing and awareness of purpose of assignments

Beth's seatwork performance was a truly social occasion for her, and much of the conversations with others revolved around relative progress on the seatwork. For example, in a mid-February observation, there were at least four comparisons of progress on boardwork made within fifteen minutes, and Beth raised her fists in a silent cheer for herself whenever she finished a sentence. The observer noted that she and a friend seemed to be competing to finish the work first. On another occasion, she asked the same boy to wait for her to catch up with him on the Weekly Reader assignment.

No direct questions were asked to Beth about her understanding of the purpose of the assignments.

Classroom C, Student 12: Annette
(Adequate pattern of responses)

Annette was initially placed in the highest level reading group and remained there during the year. She was generally very attentive to her seatwork, although she was able to socialize at the same time. She performed at a uniformly high level on her seatwork. The teacher described her as a "self-motivated" child whose family had prepared her well for school.

Ease of answering and awareness of difficulty

Annette was completely correct on most of her seatwork assignments. On boardwork, she copied correctly and smoothly in one to two word chunks, with few checks for spelling, indicating familiarity with the words. She read the sentences easily. On one occasion, she and a few others joked by reading off incorrect choices for the boardwork after they had correctly completed it. This seems significant in that only someone who clearly grasped the material would find incongruent answers humorous. On St. Patrick's Day, the teacher introduced a word search puzzle with several new words related to the holiday. Annette was one of a few students who already knew all of the words without assistance. There were no occasions on which she indicated that something was difficult for her, and her performance suggested that, indeed, all assigned work was easy for Annette.

Strategies for doing assignments

The most obvious strategy used by Annette was to talk herself through her assignments. She talked as she copied from the board, and she read aloud sentences from her workbook before she marked choices.

Once, when she had interrupted herself to talk briefly to a friend, she returned to her work by saying, "Now, where did I leave off?" When doing a word search puzzle, she told the observer that she looked "backwards, frontwards, diagonally, and then cross it off," an explanation of strategy that matched her behavior while doing the puzzle.

Help-seeking. She was never observed needing help or seeking it.

Attention to finishing and awareness of purposes of assignments

Out of five observations, there were only two references to Annette comparing her progress with someone else, and on one of these, she was probably drawn into a conversation begun by others. The observer noted that she never worked with urgency, although she maintained a good pace. The evidence suggests that finishing for its own sake was not important to her.

Annette was asked about the purposes of seatwork assignments only once. When asked what she was learning from the boardwork, she answered "the words." There was no indication that she thought about skills of using sentence context and initial sounds to make the decision (which was not noted by any of the children).

Classroom D, Student 13: Aaron
(Pattern of poor responses)

Aaron was originally placed in the lowest level reading group. By the end of the year, he was in a group of three boys, one of whom came from a special ed room elsewhere in the building, and the other of whom was a new student in the classroom. All other students in Aaron's group at the beginning of school had stayed together or moved up. Thus, Aaron's reading group level actually dropped over the year. During seatwork, he was observed looking around, going to the bathroom at the beginning of an assignment and remaining there for five minutes, and talking with other students. His seatwork performance was uniformly poor. The teacher recommended that he remain in first grade with her, and she felt that he needed another year to grow and mature. She was sympathetic, and did not blame him for his poor performance. She attributed it to problems with "making connections" like the other students did.

Easiness of response and awareness of difficulty

Aaron's performance on most assignments and in most instructional groups (with one exception) revealed halting, stumbling reading and lack of speed with basic arithmetic operations, even as late as April. For example, in the fall, he did not recognize all of his letters and did not know all of the associated sounds. In December, he could identify sounds in simple three-letter words, but could not blend them together, and thus could not read sentences like Ted tips the cup. In fact, in December, he was still trying to sound out the sight word the, pronouncing it as 'het,' after he had stated during an October observation that he

was "having trouble with that word." Another example of his lack of automaticity in basic skills was his handwriting. In December, when copying something off the board and being interrupted, he broke off the letter b after making one stroke, and then finished it later, which may suggest that he does not have unitary physical schemes for making letters. In March, in a whole-class assignment on alphabetizing, he was unable to list the letters down the sides of the columns on his paper. He did this very slowly, looking around frequently at his neighbors' papers (The teacher had just removed the letter chart from the front of the room, so that could not prompt him.) This occurred even though he could say the letters along with the rest of the class during a choral response. In April, he performed at chance level on three multiple choice dittos, and when the observer asked him to read the sentences on these assignments, he could not read several of the key words in each sentence. In May, while doing a whole-class assignment that required the students to make up sentences with the words go, goes, sent, who, when, where, he could not read all of the words or spell the words he wanted to use. (For example, his sentence for the word goes was "dot rat is goes to the his," which he read as including the word going.)

There were a few exceptions to this trend, and it is notable that they occurred when the teacher was working with him and breaking down a task into smaller parts. When observed in reading or math groups with an aide, Aaron's performance was as described above. However, when he was observed in a reading lesson with the classroom teacher when she was teaching beginning blends in a series of simple, clear questions with much encouragement, Aaron was able to answer successfully. When the

teacher talked to him about the assignment that required him to make sentences with words on the board, she saw his initial difficulties, then helped him to state a sentence with the word goes (he decided on "Jenny goes to the park" about his sister), then suggested that he write it, "one word at a time, and watch your spacing." He then produced a sentence that comes close to his thought: "Jnnmgoe gonest iD the prkn."

Part of Aaron's difficulty seemed to stem from his inability to reason with more than one piece of information at a time. The teacher alluded to this during her interviews and it was apparent during observations as well. One example was his facility with single letter-sound associations but his difficulties in blending sounds. In math, he also demonstrated problems coordinating several pieces of information. In a math group with an aide, students were to listen to oral addition and subtraction problems, write them on the chalk board, and solve them. Although Aaron could do the arithmetic some of the time, he had problems writing down the numbers without reversing them, figuring out the right sign from the oral directions, and then performing the correct operation accurately. During a worksheet on fractions, Aaron centered on the notion that he was to mark those items that were just one piece colored in. His conception of one-half or one-fourth did not involve the coordinated relationship among equal sizes, numbers of pieces in the whole, and the number of pieces in the part selected for focus.

In spite of his frequent poor performance, Aaron often made accurate statements about what he did not know. For example, he said about the sentence he wrote (where Jenny was spelled Jnnmgoe) that

"I can't spell my sister's name." On another occasion, he was asked to read by the observer and before he started, he pointed to the apostrophes in the word we'll and said, "I'm not very sure about these things." When the observer said, "Those are called apostrophes," he said, "I can't read words that have 'postrophes in it. I don't know which those mean." When he came to a word that he could not read, he reported to the observer that, "I don't see that word much" or "I have seen this word but I can't spell it." Once he told the teacher, "Sometimes I can remember long words, but sometimes I can't." His comments suggest that he viewed reading as a process of encountering and remembering whole words, rather than a set of strategies for figuring out words, although he did attempt to sound out words and was sometimes successful with this tactic.

Strategies for doing work

Observations of Aaron reveal little about the actual strategies used to complete his assignments. Indeed, his most frequent response to a new assignment was to disengage, either by looking about, watching the teacher in another part of the room, talking to friends, or spending five minutes in the bathroom. (The latter may have been quite legitimate, but it is interesting that three such lengthy trips occurred right after Aaron encountered a sentence he could not read or write.) The most obvious strategy in use by Aaron was sounding out words he did not know, although, as noted above, he often had difficulty blending sounds even when he had made the correct letter-sound associations. Aaron was not ever observed talking to himself as he proceeded through an assignment, and in this respect he was different from almost all of the other children watched. Once when

he had incorrectly marked a sentence on a worksheet (which he had read without talking to himself), he corrected himself when the observer asked him to read the sentence aloud to her. His expression indicated that he saw the error very quickly once he had spoken the sentence aloud. This suggests that he might have performed better (at least on assignments that he could read) if he had guided himself vocally. Two other examples support this notion. During the alphabetizing assignment described earlier, he had trouble writing down all of the letters quickly, and seemed to be looking around. However, he had been able to say the alphabet along with the rest of the class earlier. While writing the alphabet, he did not appear to be saying the letters to himself. When writing the sentences from words on the board (described earlier), he was much more successful when the teacher had him say the sentence to her than he had been originally (although he was not observed doing the original writing, so it is not known if he vocalized or not). These examples suggest that self-talk might have helped him, but he did not use this strategy spontaneously.

Help-seeking. Despite his difficulties and awareness of many of them, he was not observed asking for help. The teacher did help him more than almost anyone else in the room, but she initiated all of those contacts during seatwork time; he did not seek her out. On only one occasion was he observed looking at another child's paper at a time when he needed help, but even then he did not ask directly for assistance. However, he never appeared to be frustrated or upset with his performance, and when he talked about what he did not know, he did so in a matter-of-fact matter.

Attention to finishing and awareness of purpose of assignments

Aaron did not seem to be concerned about getting finished. When the teacher announced that worktime was up and he had not completed his assignment, he demonstrated no panic and simply put his work away. (It should be noted that there were no consequences for not finishing work in this class, although the work would be there to do during the next work period.) In two conversations with the observer, Aaron did refer to the basal he was reading and which one came next. His view of progress through the books was a matter of pride. For example, he told the observer that he was "almost in Tigers" with excitement in his voice. On another occasion, he mentioned that he was "not even in Rainbows next," as if he was lagging behind.

Aaron was not often asked directly about the purposes of assignments. The one time that he was and gave a clear answer, he was asked about the purpose of the page on fractions (where the students were to note all pictures in which one half had been colored on one page, and one fourth on another page). When asked what he was learning about, he readily said "Halves." When asked why he needed to know about halves, he said, "I don't know. I don't even know what halves is."

Classroom D, Student 16: Rachel
(Adequate pattern of responses)

Rachel was originally placed in the highest level reading group and she remained there all year. She was a quiet child who was never corrected for misbehavior. She was successful with all school tasks observed. During seatwork, she was attentive to her task with only occasional glances about the room, and she worked carefully and steadily and was among the first of her group to finish written assignments.

Easiness of response and awareness of difficulties

Rachel was usually completely correct on her seatwork, with the exception of one page on long and short vowel sounds. She read fluently when asked to read her worksheets aloud. She was not asked about the relative difficulty of assignments and made no statements to indicate that she viewed one kind of work as harder for her than another kind.

Strategies for doing work

There was little evidence of specific strategies used to complete assignments. Rachel always started her work immediately and steadily worked through it with few visible indications of what and how she approached it. Occasionally she moved her mouth as if talking or reading to herself, but there was no overt vocalizing (which might indicate that she has developed to the point of completely internalizing her self-talk). Two incidents deserve notice and may suggest that Rachel was fairly sophisticated in her use of metacognitive strategies.

Once, after completing three worksheets, she read over them all before turning them in. Such self-checking was not often observed in any of the classrooms. On another occasion, she began her work period by circling the numbers of the assigned pages, which may indicate a planful approach to getting started. (On the other hand, this was something the teacher usually did, so Rachel may have been simply complying with form requirements as she perceived them).

Attention to finishing and awareness of purpose of assignments

There was no evidence that getting finished was a preoccupation of Rachel's. She made no statements about her progress to herself or anyone else. On one occasion, she was asked about the purpose of a workbook page and she stated that it was about "long and short sounds." On other pages, however, she indicated that she was just "learning about reading."

Appendix 2

Interview Variables that Comprise Cluster Scores

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I. Student Outcomes

A. Emphasis on discrete skills and accuracy without reference to comprehension.

1. Review, practice. The teacher said that a rationale for seatwork is to provide students practice, to review material that had already been taught, or to reinforce something that had already been taught. The emphasis here was on seatwork as a follow-up activity to previous instruction. This was in response to a question that asked what the teachers considered when selecting seatwork assignments.

2. Specific skills. The teacher mentioned specific skill areas as the basis for seatwork assignments. These include phonics, spelling skills, handwriting skills, and punctuation. This was in response to a question that asked what the teachers considered when selecting seatwork assignments.

3. Match to what is taught. The teacher explicitly referred to the relationship between seatwork and other instruction. This was in response to a question that asked what the teachers considered when selecting seatwork assignments.

4. Correctness/accuracy. The teacher listed correctness of papers and accuracy as one of the criteria in checking. This was in response to a question regarding when and how the teacher checks seatwork and provides feedback to students.

5. Specific skill or knowledge gained. This was in response to a question about the teachers' assessment of progress in reading achievement of target children.

6. Word analysis and recognition. This refers to improvement in letter recognition, sound recognition, letter-sound correspondence, or phonics skills and increased ability to learn sight words and increased sight vocabulary. This was in response to a question on the teachers' thoughts relative to final assessment of reading progress.

B. Emphasis on comprehension and sense-making.

1. Sense making/comprehension. The teacher indicated that she looked for some sign that the students had understood what they did, comprehended what they read, or in some fashion had "made sense" out of the doing of the task.

2. Organization. The teacher referred to the students' ability to see patterns and to set up papers according to correct format, remembering to include needed elements such as name and date and how to utilize spaces and lines on the paper. It also included references to organization of supplies, personal effects, orderliness of desk, and understanding rules and routines. It did not include

handwriting or neatness. This was in response to a question about what the teachers took into account when assessing student progress in reading.

3. Sense-making, as used to assess progress. The teacher referred to the students' ability to see patterns and to set up papers according to correct format, remembering to include needed elements, such as name and date, and how to utilize spaces and lines on paper. It also included references to organization of supplies, personal effects, orderliness of desk, and understanding rules and routines. It did not include handwriting or neatness. (Same question as above.)
4. Comprehension, as used to assess progress. (Same question as above.)
5. Preference that student wait for help. This was in response to a question about the teachers' preferences for what to do when stuck.

C. Emphasis on neatness.

1. Neatness/legibility. The teacher indicated that she looked for neatness and cleanness of papers, legible writing, and "good pictures" when checking. This was in response to a question regarding when and how the teacher checks seatwork and provides feedback to students.
2. Neatness. The teacher referred to appearance of written work; i.e., formation of letters, uniformity of size of letters, spacing, correct use of lines and spaces on writing paper, neat coloring, or

smooth versus wrinkled or crumpled paper. It included overall appearance of drawings and asthetic and technical aspects of drawing. This was in response to a question about what the teachers took into account when assessing student progress in reading.

3. Handwriting, as used to assess student progress. The teacher referred to improvements in letter formation, uniformity, and spacing. This was in response to a question about what the teachers took into account in a final assessment of student progress.

D. Emphasis on Creativity

1. Language development/creative work. The teacher mentioned the need for language or vocabulary development or the need to develop creative thinking as one rationale behind selection of seatwork assignments. She may have also talked about the need for students to express themselves while doing seatwork as an important consideration. This was in response to a question that asked what the teachers considered when selecting seatwork assignments.

2. Creativity, as considered in final assessment. The teacher referred to students' increased ability to compose their own sentences or other written products. This was in response to a question about what the teachers took into account in a final assessment of student progress.

II. Student Processes

A. Emphasis on persistence, completion of assignments

1. Completeness, not skipping. The teacher said that one of the things she checked for is that students had finished their papers and had not left anything out. This was in response to a question regarding when and how the teacher checks seatwork and provides feedback to students.

2. Teacher's standards for work completion. The extent to which the teacher stressed completion, whether the emphasis was low, moderate, or strong. This was in response to a question about the emphasis teachers placed on task completion.

3. Student persistence, as used to assess final progress. The teacher referred to the students' ability to stay engaged in seatwork versus "playing around," and finishing within the allowed time. It included references to beginning on time versus procrastination; being thoughtful about the task versus rushing through assignments with the sole purpose of being the first to finish, effort, maturity, (staying on task) versus "immaturity" (constant talking to others). This was in response to a question about what the teachers took into account when assessing student progress in reading.

B. Emphasis on effort, confidence

1. Reinforcement, encouragement. The teacher focused on motivating students through feedback. This was in

response to a question regarding when and how the teacher checks seatwork and provides feedback to students.

2. Evidence of effort. The teacher indicated that one of her criteria when checking was to see that students had tried to do the work. (Same question as above.)
3. Confidence. The teacher referred to student's willingness or confidence in his/her ability to do the task. Included were references to self-concept, eagerness to do the work, willingness to give oral or written answers, trusting one's experience, risking being wrong, and pride in one's work. This was in response to a question about what the teachers took into account when assessing student progress in reading.
4. Confidence-independence. The teacher referred to the student's willingness to attempt the task, to put down answers on paper, or to risk being wrong. It also referred to improvement in figuring out how to do a task without assistance, such as reading directions, or otherwise making correct decisions about how to do a workbook page or other such assignments. It did not refer to creative writing or the ability to make one's own sentences. This was in response to a question about what the teachers took into account in a final assessment of student progress.
5. Effort, as considered in final assessment. The teacher made comments about trying more, working harder, wanting

to do well, and caring about work. (Same question as above.)

6. Prefer student keep trying. The teacher indicated that she preferred that a child who was stuck and could not get help wait for help without finishing until help was available. This was in response to a question about the teachers' preferences for what to do when stuck.

C. Emphasis on behavior, cooperating with teacher

1. Routine, keeping busy, or any other management consideration. The teacher mentioned, as part of her rationale for selecting seatwork, that it is used in teaching students classroom routines and/or to keep them occupied while she taught small groups or individuals. This was in response to a question that asked what the teachers considered when selecting seatwork assignments.

2. Cooperation. The teacher referred to the student's willingness to accept the teacher's (or other adult's) authority, and/or maintenance of good humor and a positive relationship with peers. Included are references to the student's ability to keep rules and willingness to abide by established rules and routines. This was in response to a question about what the teachers took into account when assessing student progress in reading.

D. Emphasis on student paying attention

1. Attention used in assessing work habits. The teacher

referred to the student's ability to listen and "track" or stay with (1) whole-class or reading group activities, and (2) teacher presentations and explanation of assignments. It does not refer to the quality of attention given to seatwork or being "on task" in the sense of doing the assignment. It also included general references to "attentiveness" and "inattention." This was in response to a question about what the teachers took into account when assessing student progress in reading.

2. Attention used in assessing progress. The teacher made references to listening to directions, concentrating more deeply, or for increased amounts of time. This was in response to a question about what the teachers took into account in a final assessment of student progress.

E. Acceptability of students helping one another with seatwork

1. Teachers' acceptance of students helping one another. This referred to the degree to which the teacher endorsed the idea of students helping one another. This was in response to a question regarding the teachers' policies about students helping each other with seatwork.

2. Teacher preference for student behavior when "stuck." This refers to the degree to which the teacher endorsed the strategy of students using other children as helpers, i.e., no reservations, some reservations, and unqualified endorsement. This was in response to a question about the teachers' preferences for what to do when stuck.